

BUSINESS WEEK

MORE FERROALLOYS
TO BOLSTER
Steel Expansion
PAGE 66



Howard I. Young: American Zinc chief is a big wheel in Washington too (page 124)

A MCGRAW HILL PUBLICATION

OCT. 6, 1951

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RESEARCH KEEPS

B.F. Goodrich

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They found a special rubber for the inside that wouldn't come to pieces from the gas. They developed a way of reinforcing the hose with strong cords that stand over 5 times the pressure needed to shoot the flame—protecting the man who does the work. For good measure they made a rubber cover that stands heat in case the hose accidentally meets with hot pipes. This B. F. Goodrich hose is used to carry all three of the elements to the blowpipe.

Product improvements in hose are

typical of the work constantly being done on all B. F. Goodrich products. This hose—and other rubber products—could have been considered good enough *minus* some of these improvements, but that's not the policy at B. F. Goodrich. That's why you can find savings, find ways of doing jobs better by calling in your local BFG distributor next time you need industrial rubber products. *The B. F. Goodrich Company, Industrial and General Products Division, Akron, Ohio.*

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Takes a lot of flour to keep us in cakes, cookies, bread and buns. U. S. mills produce nearly 23 billion pounds of flour a year . . . can be set up to meet any war emergency of this country and the rest of the free world.

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New Allis-Chalmers roller mills, purifiers and sifters offer millers the greatest improvements in 50 years—scientific product control, continuous automatic operation, greater sanitation.

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Matter of fact, wherever plants are modernizing today you'll find Allis-Chalmers equipment being installed—to help further industrial progress and protect your good living.

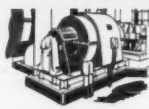
ALLIS-CHALMERS MANUFACTURING COMPANY
Milwaukee 1, Wisconsin

A-C Machines and Equipment Help Process Food . . . Many Other Products for Good Living



New flour mill in California installed 31 of these Allis-Chalmers straight-line, all-metal double roller mills with air pressure controlled rolls . . . for uniform product . . . easy cleaning.

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America's strength, prosperity and good living have been paced by rapidly expanding generation and utilization of electric power.

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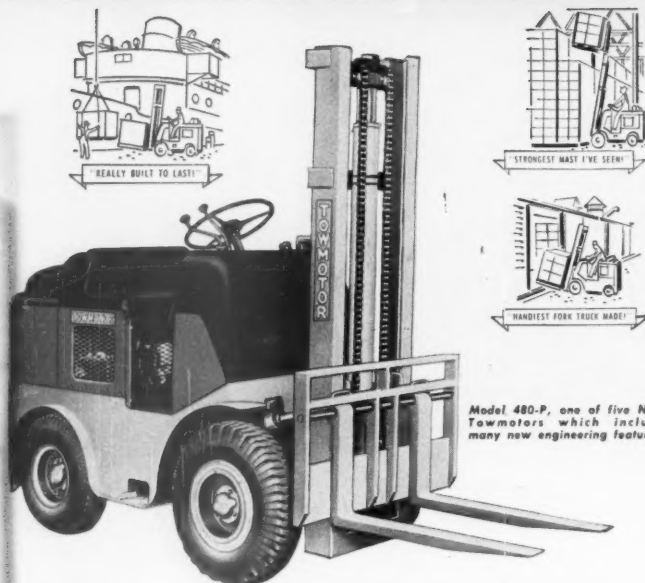


ALLIS-CHALMERS



Machinery that Aids all Industry—
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handling experts
everywhere are talking about the
NEW TOWMOTORS!



Model 480-P, one of five new Towmotors which include many new engineering features.

No wonder the new TOWMOTORS are such a sensation
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- Drop forge beam steering axle
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- Full vision instrument panel
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- Maximum free lift

- Engineered tire equipment
- Double universal joint
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- Heavy duty hydraulic brakes
- One piece drive axle assembly
- Heavy, industrial-type engines

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TOWMOTOR
THE ONE-MAN-GANG

**FORK LIFT TRUCKS
and TRACTORS**

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TOWMOTOR CORPORATION

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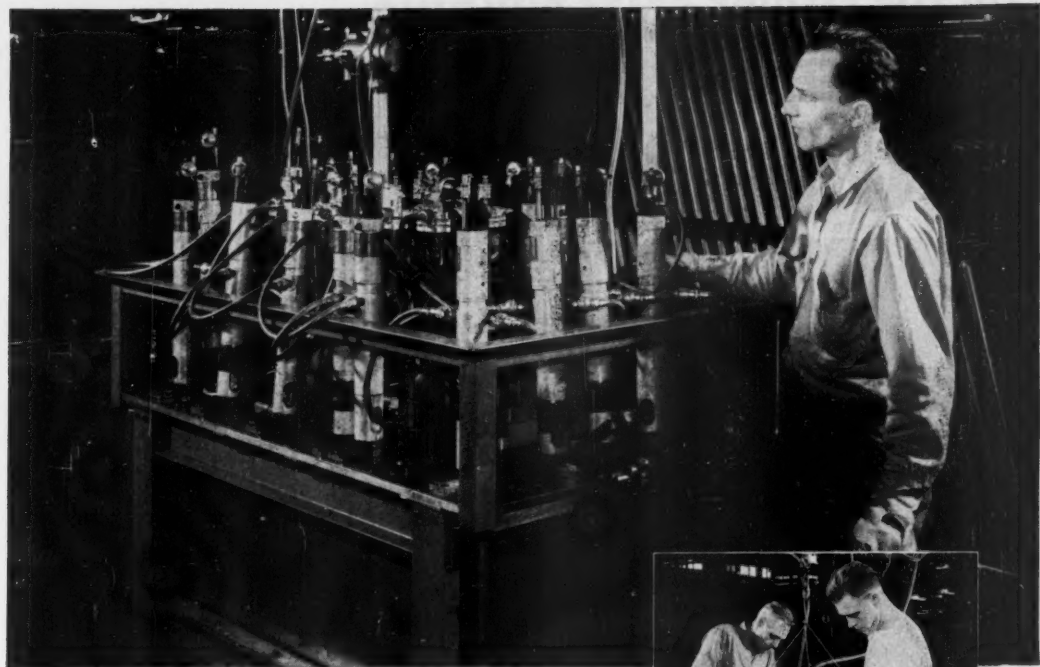
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BUSINESS WEEK • Oct. 6, 1951



THIS SETUP SAVES TEDIOUS HAND-DRILLING

AN APPLICATION OF KELLER AIR TOOLS

Fourteen holes have to be drilled in the refrigerator bodies passing along this assembly line. But the job which was formerly done by tedious hand-drilling has now been converted to an easy, automatic operation.

As refrigerators roll along the conveyor, they stop momentarily below this fixture on

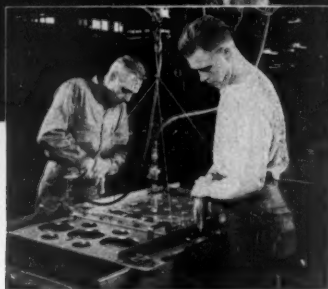
which are mounted fourteen Keller Airfeedrills.* There all 14 holes are drilled simultaneously when the workman presses a single control valve.

After a run of one model goes through, the Airfeedrills can be detached from the fixture and mounted on another, and so be kept in use almost constantly—minimizing

tool investment.

Savings in time, manpower, and investment are characteristic of applications of Keller Air Tools, which serve industry in many different ways—drilling, grinding, hoisting, riveting, driving screws, and setting nuts. Keller Tools are designed to help make tough jobs easy and reduce manufacturing costs.

*Keller Tool Company trademark



THE OLD WAY: Two men hand-drilling a refrigerator with a heavy steel template



Air Tools engineered to industry

KELLER TOOL COMPANY, GRAND HAVEN, MICH.

AIR MOTORS • AIR HOISTS • AIR HAMMERS • COMPRESSION RIVETERS • GRINDERS • DRILLS • SCREW DRIVERS • NUT SETTERS

FOR THE EMPIRE STATE BUILDING IT'S FEDERAL NOARK® BUS DUCT



Installing Federal Noark Bus Duct in Empire State Bldg. Consulting Engineer, Edward E. Ashley; General Contractor, Starrett Bros. and Eken, Inc.; Electrical Contractor, L. K. Comstock & Co., Inc.

WHEN AIR CONDITIONING was decided upon for the world's tallest building, it was necessary to find the most economical and dependable means for distributing the electric power for this added load, with its long hours of continuous duty. Federal Noark Bus Duct was chosen as most readily adaptable to the special conditions in the existing structure.

Engineering Cooperation

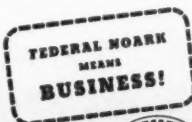
To help assure desired results, Federal engineers worked with the Consulting Engineer and Contractors to coordinate the Federal Noark Paired-Phase Bus Duct with the special needs of the installation. In this connection, 5,000 ampere bolted pressure service switches were furnished, each to feed a long run of 3-phase, 3-wire low impedance bus duct.

Federal Noark Leadership

By the introduction of radically new designs and by unique improvement of old ones, Federal Noark has rapidly won a place as a foremost manufacturer of control equipment for electric light and power. Within a few short years the demand for Federal products has necessitated the doubling and redoubling of manufacturing facilities. Today, five Federal Noark plants are operating at capacity from coast to coast.

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Main Office: 50 Paris Street, Newark 5, N. J.



FEDERAL NOARK

Plants at Newark, N. J.; Long Island City, N. Y.; Hartford, Conn.; St. Louis, Mo.; Los Angeles, Calif.



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...and everything but fists fly at cigar-chain stockholders' wrangle as new face tries to take over business. P. 22

• Waterfront Wounds

New interunion trouble can start the blood flowing again on San Francisco docks. P. 32

• Clay Jet Engines

Ceramic-coated jet-turbine parts save alloy steel, and sometimes they're even better. P. 46

• Steel's Cradle Unearthed

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• Lost in the Shuffle

The little man with the white collar is becoming almost everybody, and nobody seems to worry. P. 102

• Ease Money Squeeze

New FRB policy twist will try to relax bank credit and still keep inflation brakes on. But it may be tough to play both sides. P. 150

• Heat's On

Pressure on civilian goods production will get tighter than ever, and by next year it will be tough going if you don't make military goods. P. 162

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We've got a stop watch on Petroleum

OUR SCIENTISTS constantly seek ways to cut the time it takes to make crude oil and natural gas more economical and more useful in American life.

For example—in our synthetic rubber operations, our engineers recently developed a better way to get heat out of tanks where rubber is made. This cut processing time from between 12 and 14 hours to just 8 hours. Thus,

present equipment with a slight modification can turn out from 20% to 50% more rubber.

Many of our facilities have left "rated capacity" far behind as a measure of what Phillips can do with a given investment of money and time. Ingenuity that pays off in *more production in less time* helps us build a strong nation firmly backed by a healthy, resourceful oil industry.



PHILLIPS PETROLEUM COMPANY

Bartlesville, Oklahoma

We put the Power of Petroleum at America's Service



With Skilled Workers Short can you afford
this high unnecessary Loss?*

Eye Accidents Cost
\$160,000,000
in Lost Man-Hours**

In the effort to maintain and increase production, some sections have resorted to community-wide pooling of skilled labor and machine tools . . . a praise-worthy move. But DON'T FORGET THE OPPORTUNITY OFFERED TO PREVENT LOSSES AND BOOST PRODUCTION BY PREVENTING INDUSTRIAL EYE ACCIDENTS AND THEIR HIGH COSTS!

An AO Eye Protection program can prevent 98% of all

eye accidents . . . keep valued workers on the job . . . save (as it has for many companies) thousands of dollars annually — AND PAY FOR ITS MODEST COST IN SIX MONTHS TIME OR LESS. Ask your AO Safety Representative for complete facts and figures.

*Bureau of Census reports only 3.7% of the labor force not at work Sept. 1950.



American Optical
SAFETY PRODUCTS DIVISION

**ESTIMATE. Does not include average cost of compensation which even for the low cost year of 1938 was \$328.

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

BUSINESS OUTLOOK

BUSINESS WEEK

OCTOBER 6, 1951

A
BUSINESS
WEEK
SERVICE

Jobs aren't numerous enough—or attractive enough—to lure emergency workers into the labor force.

That's what the September job count shows (as the August one did, too).

The total of people holding jobs and looking for them is smaller than a year ago this time. Meanwhile, unemployment is lower.

Employment is higher than it was last year by about 350,000. But that gain is very small alongside what had been expected.

But even more surprising is the size of the civilian labor force. By definition, people working or looking for work are labor force members. Expanding defense output had been expected to swell their numbers.

However, the total in September was below 63.2-million. That was some 300,000 less than a year earlier.

Draft calls and enlistments have held down the size of the civilian labor force, of course. But the military is only a partial factor.

The slump in consumer goods is fully as important. And the lag in defense production is probably most important of all.

Thus it is likely that, allowing for seasonal factors, employment and the work force will expand as defense and consumer goods pick up.

Employment of nearly 61.6-million is nothing to complain about. That is a record for September.

And the drop of a little over 1-million from August to September is no more than normal. It represents the back-to-school movement. In fact, the drop was smaller than last year.

The only thing is, a manpower pinch had been expected before now.

Fewer people in the labor force while employment runs very high explains the low level of unemployment. The jobless totaled only 1.6-million in September. That's up a few thousand from August, but still represents a practically irreducible minimum (short of a job freeze).

Weekly pay checks are fattening up a bit—quite aside from wage rates.

The slow decline in hours worked has been checked. That showed up in August, and later figures undoubtedly will confirm an upturn.

The turn, as was to be expected, came first in durable goods manufacturing. Here the average gain was half an hour per week per worker as early as August—when the soft goods work week still was declining.

Hourly wage rates in durable factories also rose a bit in August.

Consumer credit scored its first noteworthy gain of the year in the first month after the controls were relaxed.

This, however, doesn't prove the point of those who argued that the retail slump would be cured by easier credit. The gain in retail volume was largely seasonal; sales of durables, particularly, were still low.

Total consumer credit at the beginning of September was \$19.3-billion. That was a gain of \$171-million in a month.

About half of the rise was in instalment credit on autos.

However, there also was an unusually sharp gain in instalment loans—

BUSINESS OUTLOOK (Continued)

BUSINESS WEEK

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the type of personal loan that individuals often use to wipe out doctors' and dentists' bills, overdue charge accounts, and the like.

Probably the easier instalment terms encouraged just that. Hence the \$74-million rise in instalment loans in a single month.

Sales of consumers' durable goods in August showed little effect from the easing of instalment terms.

While there was a small gain over July, volume of a little over \$4-billion for the month was nearly 20% below a year ago.

Soft goods sales, however, rose almost to \$8.1-billion. That was up \$600-million from July and about \$300-million above a year earlier.

Business in consumer durables still is a bit spotty. Latest factory sales figures on household washers show a good gain over the midsummer low. Output of TV sets, on the other hand, still pointed downward.

And both washers and TV were way behind year-ago levels.

Furniture shipments rose 40% over July, but still were 7% below a year ago. However, some of the shipments were against the order backlog. New orders ran 38% behind a year ago, according to Seidman & Seidman, accountants for the industry.

You'll hear a lot about soft corn over the remainder of this year.

The crop was hard hit by frost over the weekend. From Illinois east, the damage was slight. But the western part of the main belt, as far south as Northern Kansas and Missouri, felt the cold.

Much of the corn was two weeks late, frost five to 12 days early.

The result is that a lot of wet corn will have to be fed quickly to avoid spoilage. And some was lost. That's a blow to the feed supply.

Feed is a rising farm problem. Corn crops totaling 3-billion bu. were a novelty before the war; now anything less is alarming.

The reasons aren't hard to find: record or near-record livestock and poultry numbers, plus the need to backstop western Europe on feed and food.

More fertilizer is the best bet for boosting feed output. So says Ernest T. Baughman, agricultural economist for Chicago's Federal Reserve Bank.

But he notes that there is an over-all shortage of fertilizer.

The question, as Baughman sees it, is whether we can continue to expand livestock and meat supplies at reasonable prices to consumers.

Short-range, the outlook is not bright. Feed is getting increasingly dear relative to meat prices. That puts on a squeeze.

Meat for the average consumer next year will run about 146 lb., according to the American Meat Institute. That's up from an estimated 144 lb. per capita this year.

This year's business slump undoubtedly was rough on a lot of people. But it doesn't bulk very large in the over-all picture of output.

Business Week's Index has been virtually flat for five months.

And now the Federal Reserve Board publishes its August index number at 218 and says September activity was about the same. This is only about 2% down from the winter peak and up five points from July's low.



Petroleum... and *The National City Bank of New York*

No nation, no matter what its size, can hope for leadership in today's world without access to the products of a modern petroleum industry.

For ours is a civilization of wheels... and petroleum keeps the wheels turning. As a source of power, it drives an ever-increasing number of automobile, truck, and train wheels; and those modern modifications of wheels, ship and airplane propellers. And as a lubricant, petroleum alone makes possible the high-speed whirring of all the wheels in modern machinery.

As you might expect, the United States swallows petroleum products in Gargantuan gulps... in 1949, more than seven billion dollars' worth, *wholesale!* To get these products out of the ground and to the consumers' wheels and gears, the petroleum business called upon assets totaling more than 32.5 billion dollars. In the process, it paid—and generated—more than 3.5 billion dollars in State and Federal taxes.

Business on this scale calls for banking services of comparable scope. This is why you'll find the great petroleum companies and other domestic and world-wide corporations turning to The National City Bank of New York for day-to-day banking services. This Bank's services are quickly available, in the United States and throughout the world.

In the domestic division National City has 67 Branches in Greater New York and correspondent banks in every state. Overseas it has 54 Branches whose people know foreign trade, financing, and local conditions. It has correspondent banks in every commercially important city of the world.

Member Federal Deposit Insurance Corporation

First in World Wide Banking

Are You Up-to-date on Acetate?



Office equipment manufactured by
Remington Rand Inc., using Celanese®
Acetate Transparent Sheeting.

Acetate...for a Better Look at Business

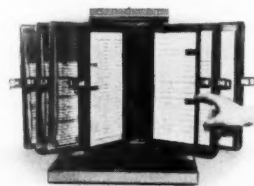


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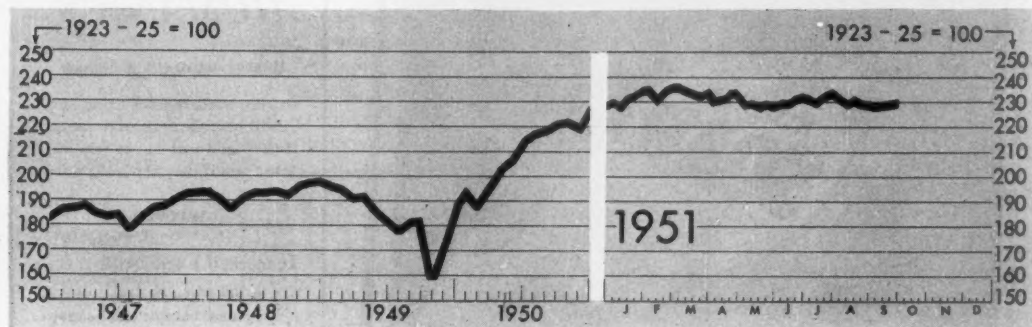
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*Reg. U. S. Pat. Off.



Celanese
Acetate
S H E E T I N G

FIGURES OF THE WEEK



Business Week Index (above) *230.7 †230.1 230.3 224.4 173.1

PRODUCTION

	\$ Latest Week	Preceding Week	Month Ago	Year Ago	1946 Average
Steel ingot production (thousands of tons).....	2,051	2,041	1,965	1,952	1,281
Production of automobiles and trucks.....	115,319	†135,015	137,479	187,030	62,880
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands).....	\$49,110	\$39,876	\$35,725	\$41,309	\$17,083
Electric power output (millions of kilowatt-hours).....	7,102	7,014	7,146	6,503	4,238
Crude oil and condensate production (daily av., thousands of bbls.).....	6,304	6,298	6,232	5,903	4,751
Bituminous coal production (daily average, thousands of tons).....	1,817	1,810	1,791	1,922	1,745

TRADE

Carloadings: manufactures, misc., and l.c.l. (daily av., thousands of cars).....	81	80	78	82	82
Carloadings: all other (daily av., thousands of cars).....	63	62	62	63	53
Department store sales (change from same week of preceding year).....	-1%	-10%	-3%	+10%	+30%
Business failures (Dun and Bradstreet, number).....	154	160	164	148	217

PRICES

Spot commodities, daily index (Moody's Dec. 31, 1931 = 100).....	462.4	457.0	453.0	462.9	311.9
Industrial raw materials, daily index (U.S. BLS, Aug., 1939 = 100).....	313.5	308.4	304.2	309.5	198.8
Domestic farm products, daily index (U.S. BLS, Aug., 1939 = 100).....	353.2	341.7	344.4	346.5	274.7
Finished steel composite (Iron Age, lb.).....	4.131¢	4.131¢	4.131¢	3.837¢	2.686¢
Scrap steel composite (Iron Age, ton).....	\$43.00	\$43.00	\$43.00	\$40.67	\$20.27
Copper (electrolytic, Connecticut Valley; lb.).....	24.500¢	24.500¢	24.500¢	23.925¢	14.045¢
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.).....	\$2.39	\$2.39	\$2.35	\$2.20	\$1.97
Cotton, daily price (middling, ten designated markets, lb.).....	36.66¢	35.90¢	34.25¢	40.46¢	30.56¢
Wool tops (Boston, lb.).....	\$2.10	\$2.00	\$2.43	\$3.10	\$1.51

FINANCE

90 stocks, price index (Standard & Poor's).....	186.5	185.9	185.1	156.0	135.7
Medium grade corporate bond yield (Baa issues, Moody's).....	3.46%	3.45%	3.49%	3.22%	3.05%
Prime commercial paper, 4-to-6 months, N. Y. City (prevailing rate).....	2½-2¼%	2½-2¼%	2½-2¼%	1½-1¼%	2-1%

BANKING (Millions of dollars)

Demand deposits adjusted, reporting member banks.....	50,532	51,357	50,976	49,238	†45,210
Total loans and investments, reporting member banks.....	71,408	71,604	70,488	68,779	†71,147
Commercial and agricultural loans, reporting member banks.....	20,078	19,938	19,502	15,725	†19,221
U.S. gov't and guaranteed obligations held, reporting member banks.....	31,212	31,333	30,930	33,845	†49,200
Total federal reserve credit outstanding.....	24,677	†24,783	24,001	20,075	23,883

MONTHLY FIGURES OF THE WEEK

	Latest Month	Preceding Month	Year Ago	1946 Average
Consumer credit outstanding (in millions)..... August.....	\$19,306	\$19,135	\$18,842	\$6,802
Installment credit outstanding (in millions)..... August.....	\$13,060	\$12,905	\$13,009	\$3,025
Retail sales (seasonally adjusted, in millions)..... August.....	\$12,075	\$11,816	\$12,682	\$8,358

*Preliminary, week ended Sept. 29.

††Estimate (BW—Jul. 12 '47, p. 16).

‡ Date for "Latest Week" on each series on request

‡ Revised.



A \$14,500 DISCOVERY ON A GROCER'S SHELF

Workers making plastic picture frames used a chemical cleaning agent to prepare the frames for painting. They complained constantly about distressing vapors... and with good reason, for the fumes of this chemical can be obnoxious and toxic. The manufacturer called in Liberty Mutual.

The solution

After a study of the process and a discussion of rinsing and drying problems, the Liberty Mutual industrial hygienist asked the plant engineer to send out to a grocery store for a box of a new detergent. It worked fine. The plant has now eliminated all danger of toxic vapors, and saves \$14,500 on its annual bill for cleaner.

HUMANICS: A new concept

Liberty Mutual's industrial hygienists work to protect the comfort and health of men and women. In this case, their recommendations produced a savings in manufacturing expense as well. But Industrial Hygiene is only one phase of Liberty Mutual's comprehensive program. It's called **HUMANICS** — a new word for a new science — which brings

together all activities for preventing accidents and reducing the disability and cost resulting from accidents that do occur.

HUMANICS guards machines... and helps put "invisible guards" around workers to prevent them from hurting themselves. It concerns itself with the medical care of injured workers and the rehabilitation of the badly injured. It is not a departmental activity because the prevention of loss in all forms and the consequent reduction of compensation insurance costs is the basic business of Liberty Mutual.

You can check your own program

"**HUMANICS: A new concept of loss control in industry**" is a new book describing five ways to reduce the cost of Workmen's Compensation Insurance, increase productivity and improve employee relations. A request will bring you a copy without cost or obligation. Address Liberty Mutual Insurance Company, 175 Berkeley Street, Boston 17, or the nearest branch office.

HUMANICS

LIBERTY MUTUAL'S PROGRAM

to keep workers from being hurt
... to help them recover sooner
if they are hurt... to rehabilitate them if they are badly hurt,

THROUGH

Industrial Engineering

to eliminate physical and mechanical hazards and to establish safe methods and operating practices

Industrial Hygiene

to assure a healthful working environment

Industrial Preventive Medicine

to fit the right man to the right job, or to adjust the job to the man — and to protect the worker's physical fitness.

Claims Medical Service

by eminent specialists, to facilitate the rapid recovery of injured workers

Rehabilitation

to restore badly injured workers to useful, productive lives, through Liberty Mutual's Rehabilitation Centers in Boston and Chicago and specialized medical facilities wherever available.



We work to keep you safe

WASHINGTON OUTLOOK

WASHINGTON
BUREAU
OCT. 6, 1951



Another defense expansion is ahead. There's now general agreement among Truman's military advisers that our strength and that of our allies must be upped beyond present goals. Truman is expected to agree.

The size of the bulge still is uncertain. The military tentatively thinks that minimum safety requires another \$15-billion or so, mostly for planes and atomic weapons. It will be January before the details are settled.

The impact on business will be spread out over the next few years. Most of the extra will be added on behind arms demand now scheduled to avoid a big and sudden strain on materials and production. But it will postpone the time when military demands ease off and industry again is let loose from controls.

Bombing Manchurian air and supply bases is a hot issue once again. Since MacArthur was fired, the Pentagon brass has been silent about this. But now there's more and more talk that bombing may be unavoidable.

Here's the reasoning behind this speculation: The cease-fire is not sure. True, the Reds keep up the hope. But meantime they are building ground and air strength. We now face the threat of a winter bogdown.

There's a real danger that bombing Manchuria will provoke Russia. But the alternative is the threat of a costly, long stalemate. The answer may be brought to Washington by Gen. Bradley from Korea. And there's no doubt that the disposition now is for us to "turn everything loose" in the hope of "persuading" the Reds.

Current casualties are the highest yet. Washington wouldn't be surprised if the Pentagon announces them gradually to avoid shock.

The draft will continue to take more men. Childless married men are being classified as available. You are sure to lose employees in this group this fall.

College deferments will be much less liberal starting next semester. Technical students will continue to get preference on deferment. But—as in the case of apprentices in the skilled crafts—deferment is largely up to local draft boards.

Washington is reluctant to set standards, though it admits the need of more uniform rules.

Metal allocations for consumer hard goods are still highly uncertain (page 162). Mobilization boss Wilson continues to hope that the present level of output can be maintained next year.

But another cutback may be ahead. Direct military needs still are on the rise. And so are the needs of supporting industry. The danger is that officials have underestimated these needs and may have to compensate by clamping down on autos, appliances, etc.

The new international copper agreement won't bring any relief here. All we get is our normal share—and we may not even get that. Other countries, our allies, are continuing their policy of buying copper at uncontrolled prices, while we hold to below-the-world ceilings. So over the next year or two, copper may become more of a limit on production than steel.

The tax increase will be law by Nov. 1. The House and Senate still have some bargaining to do, but the major points now are set.

WASHINGTON OUTLOOK (Continued)

WASHINGTON
BUREAU
OCT. 6, 1951

The corporation rate will be 52%, up from the present 47%. And the rise will be retroactive. The starting time still is uncertain, but an effective date of April 1 is the most lenient you can expect.

Increases on individual incomes will be 11% to 12%. The big uncertainty here, too, is the effective date. Nov. 1 seems the best bet.

Many excises will rise. The new rates could start on Nov. 1, but may be delayed until Dec. 1.

Note coming tax law changes other than rates. They're important. They deal with such matters as gain from the sale of your home when you buy another, expensing mine development, family partnerships, and the charging of short-term capital losses against gains (page 94).

Homebuilding threatens to get out of hand in spite of restrictions on materials and mortgage money.

Starts this year will run close to 1-million, or about 20% more than officials planned when controls were put on last winter.

Starts next year now are being calculated at about 850,000 new units. But officials worry that this figure again will be topped.

A permit system for homebuilding is under consideration and may come before yearend. Under it, Washington not only would say what homes can be built, but in what areas they are to be located.

A "freeze" of prices now below ceilings has been widely rumored as an OPS scheme. But price fixer DiSalle disavows any such intention. He says he will go ahead and set price ceilings in accordance with the Capehart and Herlong amendments just as soon as Congress decides whether to stand by the relief formula or revise it.

The RFC is tightening up still more as a result of investigations showing favoritism and influence. From now on requests for extensions of loans already made will be handled as if they were new requests.

More scandals within the government will be dredged up soon by congressional investigators. Mink coats, freezers, and cameras will look like peanuts if the investigators are able to bring out what they think has been going on in tax offices.

There'll be no letup as the 1952 elections come closer. Republicans think they now have the makings of a real issue. And there are enough anti-Truman Democrats to join with them and keep the ball rolling.

The Forrestal diaries, now appearing in print, are revealing. They throw new, authoritative light on postwar policies that led up to war in Korea. Two points:

The plan to bring the Reds into a coalition government in China originated with James F. Byrnes, Secretary of State in 1945. The diaries relate that Byrnes made the suggestion to use withdrawal of aid to force Chiang to compromise with the Communists.

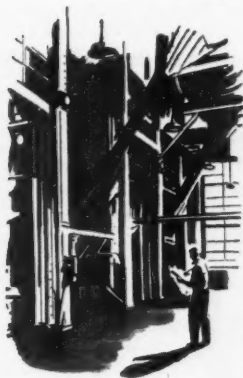
The danger of war with Russia was generally recognized by top men in Washington as soon as World War II was over. Despite this, we went ahead with demobilization and were still cutting down defense when war came in Korea.

RIGHT AROUND THE CLOCK...

America counts on coal!



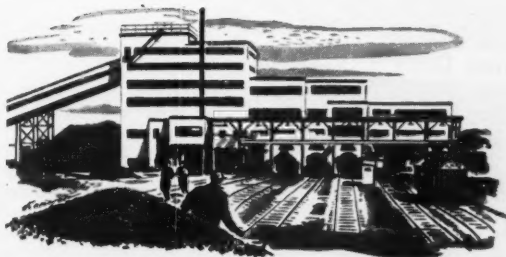
Morning, noon and night—from farm to factory to home—almost everything Americans use in their daily lives is made with coal or with the power that coal generates. Steel and heat—aluminum and nylons—cement and chemicals—these are but a few of the thousands of things that take coal to make.



Here is a modern, automatic coal stoker in a small defense plant. It is typical of the new equipment designed to burn coal more efficiently and make it an easier, more economical fuel to handle. Other modern installations such as automatic ash-removal systems and conveyor belts that carry coal from storage to stoker are added reasons why coal is the preferred fuel for economy and dependability.



Generating electric power for the home—to light the lights, to run all the modern appliances that make American life so convenient—is one of bituminous coal's biggest jobs. Over one hundred million tons will be used this year to generate America's electricity. The utilities rely on coal because they know coal is the most dependable in both supply and price stability. For 97% of all American fuel reserves are in coal.



This giant preparation plant turns out "prescription" coals—sized, washed, graded, and treated to do specific jobs with increased efficiency. It's a prime example of today's progressive coal mine operation! Today's better-prepared coal, when used with efficient modern equipment, adds from 10% to 40% to the heat or power obtained from the same amount of coal in years gone by.

To deliver the best possible product at the lowest possible price the operators of this country's 8,000 bituminous coal mines have invested hundreds of millions of dollars in research—modern mining equipment—in developing new mine properties. This long range program has been so effective that today the output per-man, per-day, in America's mines is more than 32% greater than in 1939. *Because of coal's natural abundance and the efficiency with which it is mined and prepared for market, coal will continue to be the most dependable and economical fuel for heat and power!*

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WASHINGTON, D. C.

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Increase *production* lower *unit costs*

THIS GOAL is necessary in every major field of industry and transportation. And Texaco is helping management reach it—through the use of superior Texaco quality lubricants recommended by skilled Texaco Lubrication Engineers.

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*Name on request.



THE TOUGH JOBS GO TO TEXACO

TEXACO
INDUSTRIAL LUBRICANTS



"It isn't the controls—it's the confusion."

How Bad Is It in Washington?

● Rarely has the smell of foulup been so strong in government as it is around the mobilization agencies these days.

● CMP was supposed to be foolproof; but it's not working, and no one knows why.

● No one ever expected price control to work, and so far it hasn't—for understandable reasons.

● Strangely, wage control, the impossible looking job, is running smoothest of any—but is it control?

A year of economic regimentation has demonstrated this: The further you are from desperation, the harder it is to make a controls program work smoothly.

This is the experience the country has had in 12 months of short-of-war control of the economy to support a mobilization.

The actual words of the Defense Production Act are as encompassing as the toughest words of wartime law. But when the men who invoke controls have got down to the job of doing it, they've come face to face with the political and economic problem of maintaining the civilian along with the soldier.

• **Confusion Is Rife**—This has produced confusion and frustration—a snafu. The

degree of snafu varies, of course. Wage stabilization is clean and understandable, if somewhat inflationary. Salary control has as many forms as management has ideas. Materials controls are going through birth pangs—and a bit more. Price controls are hip-deep in politics and pocketbooks—both consumers' pocketbooks and businessmen's.

Businessmen never particularly like being told what to do. But right now it isn't that which they find exasperating so much as the sheer problem of finding out what it is they are being told to do.

So what is the state of controls this week? A lot of talking with government officials and businessmen, plus some stocktaking, have dredged up these appraisals:

I. THE BAFFLING CASE OF CMP

One of the heralded virtues of the Controlled Materials Plan is its smooth simplicity and—once set in motion—its almost automatic operation.

To date, businessmen have seen no smoothness. They were promised that all would be serene once the third-quarter bugs were routed out; it isn't working that way.

Only this week the National Production Authority acknowledged as much. It told makers of controlled materials to throw out all orders authorized for the third quarter that remain unfilled by Oct. 7. Consumers of CMP prod-

ucts had expected the holdovers to stay on the producers' books to be filled in the fourth quarter.

What this amounts to is: a cut in the theoretically iron-clad CMP allotments for all consumers with unfilled third-quarter orders.

NPA had to act; producers' books were clogged with unfilled orders. Some of the blame went to the companies involved on the ground that unfilled orders not backed by a CMP allotment were never canceled, as CMP rules require. But not all the blame can be dumped on industry; the steel people

can substantiate their suspicion that the bureaucrats issued too many allotments, especially for such products as hot-rolled sheets and bars.

Once you do something like this—allot beyond available supply—you crack CMP wide open. And this is the inevitable temptation when a short-of-war mobilization makes it too painful for government to cut off supplies to anyone.

It isn't the control, it's the confusion of the controllers . . . when major war isn't with them.

So you can expect trouble and confusion from CMP all through the fourth quarter, and into the first of 1952.

NPA just doesn't know what is wrong. It is trying to trace the troubles—with a second check of compliance among the big users. Auditors already have studied the books of 650 large users and have turned up a lot of violations. NPA's feeling: The breakdowns can be found among users, rather than among producers.

II. PRICE HIATUS

Despite the pencil chewing and cries of anguish, businessmen have found they can understand most price regulations.

What really confuses them is this: Under which order should they price? The Office of Price Stabilization is taking its time telling them; they won't find out for another month or so.

• **Wide Choice**—There are already two sets of orders to choose from: (1) the General Ceiling Price Regulation and its scores of amendments, which freeze prices at the Jan. 25 level; and (2) the series of tailored orders that followed—which many businessmen never put into effect.

Now, in the offing there is a third set of orders to be based on the new Defense Production Act that Congress has been revising ever since the old one expired.

The price controllers have been operating under a self-imposed freeze on

"The farther you are from desperation, the harder



CHARLES WILSON'S mobilization is beginning to roll out arms, and . . .



ERIC JOHNSTON'S stabilizers are getting a price breathing spell, but . . .



MIKE DISALLE'S price controls are waiting legislative decisions, while . . .

their activities since Congress clipped their wings with the new defense act. Orders implementing the Capehart and Herlong amendments have been conspicuous by their absence.

• **Wait and See**—Legislation to let OPS force some cost absorption and set meat quotas still seems a possibility this week; OPS is playing a wait-and-see game. Why get out a raft of new orders when a change in the law would make them obsolete? Indeed, businessmen have already been complaining about the amount of paper work they would have to re-do when the Capehart-Herlong amendments go into effect (BW—Sep.8'51,p.24).

Another big reason for the lull in pricing activity is the lull in inflation itself. There isn't much price pressure around to worry about—except, of course, for the pressure on defense-connected goods. Prices of most consumer goods are, in fact, now below ceiling.

Right now, OPS is drifting along with the easy situation, letting the orders issued under the old defense act stand guard against a new inflationary upsurge. The old set of regulations was fairly complete and is still being constantly added to or enforced. And, anyway, it is a much tighter rein on prices than new orders would give.

SSB people don't know any more answers than they themselves do. But they generally concede that their SSB dealings have been satisfactory as far as courtesy and even sympathy goes. They'd like more speed.

• **Special Grips**—They would also like answers to some problems that nobody has been able to figure out. Besides the question of how to handle stock options, they also want to know how Christmas and special bonuses figure into the picture. Another kind of problem that isn't covered by the regulations is the question of "exile" pay. This is extra pay to branch managers and other employees who are sent to remote parts of the country. Their jobs pay more, not because of any real differences, but just because of bad locations.

But for most salaried workers, about the safest thing management can do now is this: pay out a 10% increase over 1950—this corresponds to wage stabilization. In addition, up to 10% can be given for merit. Management can do this up to committing an average of 6% of the payroll per year. Also any profit-sharing plan a company has can be continued. But there is no direction yet about matching a cost-of-living increase since January, 1951—which now amounts to 2.2%.

• **Catching Up**—The backlog of applications for salary increases before the SSB is enormous. More than 5,000 have been received, about 1,100 have been answered. But this week the board was catching up—more answers were sent out than questions were received.

The salary board is likely not to put

III. LATE START ON SALARIES

Salary stabilization is one a businessman can get mad about.

He has reasonably clear regulations covering the mass of clerical and low-salaried help. But he's still pretty confused, sometimes needlessly, on what he can and can't do in the crucial flexible area of executive and junior executive pay.

The Salary Stabilization Board hasn't done much to smooth ruffled feathers. But it's not all the board's fault. Members were not selected until July; and they had to take into account a myriad of programs concerning merit increases, historical patterns, differentials between wage earners and salaried supervisors, and the like.

But you still can't get any sign of real policy, particularly affecting high-salaried executives. For example, no word has come down from Washing-

ton yet about stock option arrangements, one way of boosting pay that still maintains a semblance of stabilization.

• **Not So Bad**—Even here though, there hasn't been any blowing of tops on a national basis, a BUSINESS WEEK survey indicates. Businessmen want to know where they stand, but most of those with problems are patiently waiting while the board clears up what they figure is a normal amount of controls red tape. Companies with long-standing policies on salary raises—mostly the bigger ones—are in relatively good shape and realize that they are. Smaller ones without established policies are having a tougher time.

But in most cases, businessmen admit that the board is doing what it can to unsnarl their special problems. Some complain though that regional

it is to make a control system work smoothly."



MANLY FLEISCHMANN'S CMP is developing baffling bugs. On the other hand...



GEORGE TAYLOR started wage control on a fairly smooth course, though...



RAYMOND ALLEN'S salary stabilization got off to a late start.

out a cost-of-living regulation—at least not as such.

Ratner, it probably will write some language that will maintain the pay

relationship between salaried workers and wage earners. This would keep the salaried man even on cost of living, as well as keep his differential.

IV. YOU KNOW WHAT YOU PAY

The regulations on what wages you can pay under stabilization are easy to read—and simple to carry out. Whether the pocketbook can stand them is another story.

The policy is simple: 10% above January, 1950, plus cost-of-living rises since January, 1951.

• **Unfinished Business**—Not all corners of the wage lid have been nailed down. Decisions are still due on how to figure pension and welfare funds, commissions, piece-work rates, and so forth. But the Wage Stabilization Board is readying specific orders on those points now. For example, a special panel on pensions and welfare funds will report to the board within a week, and a ruling should come in another fortnight.

Productivity increases have been one

of the knottiest problems to both businessmen and the board. Walter Reuther's auto workers have a 4-a-year formula. The question: how to extend this idea fairly to everyone? You have to make sure that the output of the worker and his machine has actually increased; otherwise, productivity would become a phony. This is another decision still in the offing.

Another big field to be acted upon: how to treat industries exempt from price ceilings. These are industries like public utilities, movies, newspapers.

• **Slow Start**—As simple as wage-control regulations are, they still aren't going into operation very fast. Payroll checks are being made by wage-hour inspectors, and complaints of violations are being investigated.

It's beginning to look as if the government controllers may have fallen into a trap—as temptingly baited a trap as was ever laid for a bureaucrat. They were told to do a control job; they only had to glance back five years to see the smoothest set of controls the country had ever had. What more natural than to pick up the proven devices?

It hardly seems to have occurred to anyone that the controls appropriate to a fully mobilized economy in the last stages of a war might be technically wrong for an economy that didn't aim to become more than partially mobilized.

Take CMP. It demonstrated that it could do a beautiful job of routing materials through an economywide munitions industry. But Washington is just beginning to realize that it's a rather feeble instrument for directing civilian production and that it has no real place in it to deal with rapid expansion of capital equipment.

Or take price control. The old OPA evolved techniques that, at the end, were holding prices steady despite a monstrous government deficit. But are those devices flexible enough, are they administratively workable, in an economy most of which is still steered by the price system?

It may be significant that the most smoothly working area of all—wage control—is the one that ignored the wartime precedents. The Wage Stabilization Board has attempted nothing resembling WLB's Little Steel formula. Instead it has plumped for a flexible system drawing its mechanics from postwar industry-union wage contracts—notably the General Motors cost-of-living contract.

V. WHERE DID WE GO WRONG?

There's something pretty baffling about all this. For many months after Korea everyone expected and most were prepared to forgive a certain amount of snafu. Obviously, it was going to take some pretty elaborate machinery to divert a booming civilian economy into armament production and at the same time keep the whole money structure from blowing out through the roof: it was going to take lots of men, lots

of forms, lots of new procedures. And all that was going to take time.

Now the time has gone by. The machinery is set up. The World War II models are being followed. And things still aren't working smoothly.

Obviously, the psychological differences between a big war and a little war are at the heart of the trouble. But there may also be an administrative reason:



CHARLES GREEN TAKES THE FLOOR: Leader of the anti-management group gets recognized by the chair. Green, a veteran

of other proxy fights, had conducted mail campaign for votes. He charged that management was grossly inefficient.



PRESIDENT Baumhogger (left) and his counsel are cross-examined by Green on rentals company pays. Both men got cheers from their allies and jeers from their opponents.



MANAGEMENT thinks it over while Green strikes a pose. Meeting got so heated after this

United Cigar Stockholders Fume at Top Brass

Charles Green, an electrical-goods wholesaler of New York City, is a man who makes himself heard. Several years back he bought stock in United Cigar Whelan Stores Corp. United Cigar has been struggling for years, partly because of the declining popularity of its cigar stores. And for this reason, it's been shifting into drug lines (BW-Mar.24'51,p112).

After a burst of prosperity during the

war, the company's earnings have been falling off again. Its common stock has never paid dividends.

Green thinks something can be done about this. By furiously criticizing management, he got a special stockholders meeting called for last week—to vote on a management slate of his own. Green and his group now hold 8% of the common stock.

The meeting turned out to be one

of the most informal corporate gatherings in many years. After a defense of management policies by president Walter G. Baumhogger, who said that Green's attempt to take over proved his plea that United Cigar was about to get on its feet, the two men slugged it out verbally (pictures).

Charles Green, who has a number of law suits now pending against company officers, said that he hoped "to have



IN THE COATROOM, rival proxy managers estimate each other's strength.



that it was difficult for any speaker to make himself heard, as . . .

some of these men in the Attorney General's office."

The meeting threatened to become a riot when a lawyer representing 2,000 shares owned by United Cigar employees tried to bring up Green's chequered career as president of Twin City Rapid Transit Co. (BW-Oct. 7 '50, p. 109). This had been covered a few days before in a sensational Collier's article, which was not particularly flattering to Green.

This week an impartial committee was still checking the proxies to see who won.

New Slant in OPS Ceilings

Orders tailored for single industries may pack surprises for businessmen. Some ceilings may be lower than before Congress "eased" the controls act.

At long last, the Office of Price Stabilization is getting ready to set price ceilings under the changed provisions of the new Defense Production Act.

The top price controllers have completed work on a series of standards to guide staffers in fixing new ceilings. Regulations will begin to flow as soon as Congress makes up its mind on further changes that are now in the works (page 19). And they will contain some unpleasant surprises for businessmen.

In writing new regulations, the controllers will try to keep prices as close to current levels as the law allows. And it allows lower ceilings than most people think. OPS even hopes that some roll-backs in existing ceilings will result.

• **Rifle-Shot Orders**—The forthcoming orders will mostly be tailored to apply to single industries or single lines of goods. The general type of order that covers broad segments of the economy will be soft-pedaled.

Up to now, OPS has had to rely more or less on shotgun technique. The agency has been controlling manufacturers' prices by six general regulations ever since the general freeze of last Jan. 25. This breathing spell was needed while the staff worked out the tailored orders that were agreed upon as the long-range means of regulation. Now the formulation of standards for single-industry orders marks the end of the breathing spell.

• **New Yardsticks**—Stripped of legal verbiage and allowances for special cases, the newly adopted standards require:

• **Rolling back prices** where they exceed pre-Korea levels plus cost increases through July 26, 1951.

• **Freezing at current levels** the prices of many goods now selling below their ceilings.

• **Must Show Scars**—It's the second of these yardsticks that's going to startle many businessmen. Strange as it may seem, the authority for imposing this rule is contained in last July's amendments to the Defense Production Act—when Congress was presumably softening the ceiling framework.

The act gave businessmen the right to appeal for—and to get—relief. But it also prescribed that they must first "make a proper showing" that they are suffering under a price freeze. That's the catch.

Many companies will find it hard to prove that they've been wounded. In

the spring-summer lull, many of their costs declined. As a result, new ceilings could be set fairly low on the basis of the formula: pre-Korea prices plus cost increases through July 26, 1951.

These new ceilings may well be lower, in fact, than orders like Ceiling Price Regulation 22 would have permitted. And it's these prices primarily that OPS will be going after in applying its new set of standards.

No Solution To Copper Shortage

There's scant comfort—and little, if any copper—for U.S. industry in the international allocation of the red metal for the fourth quarter.

At best, the allocation will bring a little more copper into the United States than the import rate of recent months has.

At worst, it will simply leave imports where they are now—about 30% under 1950 levels.

• **More, Maybe**—U.S. members of the International Materials Conference, which worked out the allocation, think we'll get more. The bare figures support them. The U.S. is down for 364,611 short tons from domestic and foreign sources. This indicates an increase of 20,000 tons or more over what we've been importing so far this year.

But there are two flaws in the argument. First, it went into effect too late for all the governments to police their copper consumption for the quarter. Second, there is no price agreement. This means consumers abroad can continue to pay 50¢ or more per lb. compared with the 27.5¢ that U.S. consumers are allowed to pay under price ceilings.

• **Chile on the Loose**—The allocators didn't nail down all the Chilean production as they hoped to do. Chile put 80% of the copper from its big mines into the plan. But it will sell the rest of its output where it likes, even if it means the purchasing country goes over its allocation.

• **Small Relief**—The agreement pretty much slapped an allocations label on what has been happening anyway under the impact of mobilization. If it's a pattern for what will follow next year, it means the U.S. will get little import relief for the copper shortage.

Smart Money Tries to Diversify

● Some investors now see the end of inflation in sight, second BUSINESS WEEK survey finds. They have switched to hedging against depression around 1953.

● That shows up in less enthusiasm for new land holdings than last year.

● Biggest new interest now lies in chemicals and in other "growth" industries.

● Search is for protection against both immediate inflation and eventual depression.

In St. Louis last week, the president of a small manufacturing company said he had given up trying to figure out how to invest his money. His reason is a glum one: "If the defense program ends, we will have one hell of a depression. Our production has got so high that it will more than take care of domestic needs. It will really be rough. So in investments, a man just doesn't know which way to jump."

• **Depression Thinking**—To a much lesser degree, that philosophy has come to shade most businessmen's long-term thinking on how to handle their personal investments. Last year at this time, almost none of the smart money was hedging against depression; businessmen with capital were almost unanimously concerned with inflation (BW—Oct. 7 '50, p. 24).

There's still plenty of that, of course. Nobody feels that the bottom is going to drop out of things in the near future—in fact, most investors see a lot more inflation still to come. But the point is that now they think they can see an end to it. So the smart-money boys are placing at least some of their bets on a possible economic dive around 1953.

• **Shift**—This has meant something of a shift in emphasis. Last year the main spots for investing money were common stocks, land, underground assets, and small business. A BUSINESS WEEK survey last week showed that of these, underground assets have stood up the best.

But more important has been the addition of two new factors: (1) heavy investment in the chemical industry; and (2) a new fondness for securities in all "growth" industries. Part of this trend is due to the idea that the best way to beat inflation is to grow out of it. And part of it is a hedge against depression.

• **Land Change**—Signs of the depression-type of thinking show up in the change that has come about in land

investment. Last year there was a terrific rush to buy land; the theory was that the end of inflation was so far out of sight that farm land seemed the best permanent investment. (Urban land was—and still is—unpopular as an investment because of high taxes and the atom bomb.)

Now the big rush has slowed down to a walk. Most wealthy investors are hanging on to the farm land they have already; but they have quit buying more. Their mood seems to be that this kind of investment is much harder than anything else to unload in bad times without severe losses.

• **Oil and Bonds**—By contrast, there's still a pretty lively interest in natural-resource lands, such as oil, coal, and timber. To many a businessman, such investments—either directly or through a company that has heavy holdings of natural resources—far outweigh in value such things as bonds, particularly governments. Says one Midwest investor: "Suppose you had had your money in Standard Oil 10 years ago instead of government bonds. Look how much more money you would have made."

The general attitude on bonds shows that inflation thinking is still strong. A western real estate man sums up this thinking: "I think inflation will get out of hand. We are tied to it. I certainly don't want anything that represents a debt, and anybody who bought a government bond lost money. I don't own a single one today. Nor am I carrying a big balance. If you put it in a bank you start losing on it the same day."

• **Common Stocks**—By the same token, inflation has a lot of businessmen worried about investments in company securities. Many of them feel that heavy taxes are having too crushing an effect on net earnings. On top of that, they find corporate needs for cash to carry inventory and pay taxes so terrific that they have little chance of getting any increase in cash dividends.

Still, you'll find fairly heavy continued investment in common stocks. In spite of all the unfavorable factors that might affect their prices in the future, they are still popular as a major source of investment. (But some businessmen say that's mainly because they don't know what else to invest in.)

• **Small Business**—But you'll note one interesting change since last year: Now big investors are mainly avoiding small business. They reason that government restrictions growing out of defense production have put small companies into too precarious a position. The president of a big metalworking company explains why he is putting his money into oil lands instead of small business:

"I figure that materials allocation is subject to such wide fluctuations that there's no assurance that a small business can operate at a level that will assure a reasonable return on invested capital. You have to be very selective. If the manufacturer makes a product that's subject to allocation you are in danger."

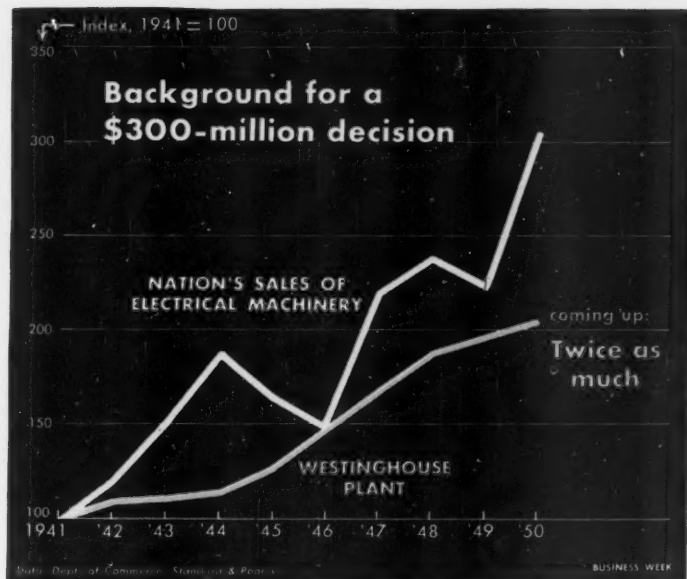
• **Chemicals**—The most definite and positive shift in the wind has been the trend toward chemical-company investments. The board chairman of a big Chicago company says that he finds such stocks to be the best means of both protecting and increasing capital: (By chemical stocks, he means oil companies as well as drug and strictly chemical companies.) He gives these three reasons for liking chemical stocks:

• Most favorable point is their low labor cost per sales dollar as compared with other industries. As a result, the chemical companies are partially protected against wage increases, and they bring more of their gross down to net than manufacturers ordinarily do.

• Chemical companies have recently been pouring millions of dollars into research and are always coming up with something new. An example: Abbott Laboratories today doesn't make 10% of its profit on products it was producing in 1935.

• Chemical products go into almost everything from the improvement of present materials to the development of new ones.

• **Canadian Investment**—Another big Chicago executive is investing heavily in Canadian securities. The reason is that he feels that Canada is now in the same industrial position that the U.S. was in 1895. It probably has the biggest oil and natural-gas reserves in the world, outside Russian-controlled or threatened areas. The recent big iron strike may make it a steel exporter in 20 years.



Westinghouse Makes a Bet

The reasoning behind the huge expansion in the electrical equipment industry gives you an idea of why industry generally is willing to bet its shirt on new capacity.

Westinghouse Electric Corp.—with one major postwar expansion under its belt—is betting another \$300-million that it will need to double its output by 1955.

Westinghouse president Gwilym A. Price had hardly sprung the news when giant General Electric placidly announced that it, too, was expanding—to the tune of about \$450-million over the next three or four years. That's equal to what GE has already spent on expansion since the end of the war.

• **Anatomy of a Boom**—It is decisions like these that have driven industry's capital spending up to levels that would have looked fantastic before 1946. Altogether they add up to about \$25-billion worth of expansion in 1951 (BW—Sep. 29 '51, p. 26). Probably they will run that much again in 1952 if the supply of materials permits.

If you take one of these decisions and put it under a microscope, you begin to see why business is willing to bet its shirt on expansion. And you get some measure of the vitality of the capital expansion boom.

• **Three Reasons**—In the Westinghouse case three crucial facts form the background of the decision:

1. With costs and taxes what they are, almost any company has to do a con-

stantly increasing volume, year after year, just to keep its net from shrinking. Last spring, when Price told his stockholders about the record year 1950, he warned that Westinghouse would have to gross 25% more in 1951 to take the same amount down to net.

2. For the first time since the 1930's, management men have stopped turning blue at the thought of overcapacity. Their order books are packed with business; they think the long-term trend is upward, even though there may be temporary slumps. Price sums up the new management philosophy in these words:

"Unless you are able to take reasonably good care of your customers in the peak periods, you won't get your share of the business when the valleys come.

"You lose more by losing your position in the market than you do by having plant idle for a time."

3. Westinghouse can see its way clear to financing its new program—without going out on a limb. Much of the money will come from retained earnings. Westinghouse borrowed \$148-million to swing its first round of postwar expansion. But since then it has either paid off or converted into stock all but \$24-million of its funded debt.

And since 1946, it has added \$182-million to its surplus account by plowing back earnings.

• **Mechanics**—With these three points in mind, Price and his directors started blocking in the specific projects that make up the Westinghouse expansion program.

In Westinghouse, any major expansion is the product of two separate streams of planning and study.

The operating men—the division managers and their subordinates—decide what they are going to need and work out their recommendations for specific projects.

Price's staff—including a squad of economic forecasters—sizes up the market, the trend of business, and Westinghouse's relation to it.

The two streams meet in a top-level planning committee. Then Price and his staff match up the specific recommendations against the economic picture. The plans that they hammer out go straight to the directors for final O.K.

• **Working Up**—The drive for new capacity generally starts with the division managers and works its way up. Westinghouse is divided into three company groups—industrial, consumer, and general. A division manager must have the approval of his product group vice-president for any proposal to take on a new product or to expand product capacity. That means that two responsible officials have to sponsor any expansion proposition that comes up for consideration at the top.

If the group vice-president approves an expansion plan, he ships it along to a planning committee that Price set up recently. With each proposal the planning committee requires that data be submitted on competition, markets, volume, design, distribution, promotion, and servicing.

The planning committee makes no decisions itself. It has two principal jobs:

(1) To make sure that every proposal is backed with all the information that Price and his staff will need to make a final decision.

(2) To work out—through a subgroup—the one-year-five-year "look-ahead" that plays a critical part in Westinghouse decisions.

• **Forecast**—The look-ahead is a forecast—as comprehensive as economists can make it—of what is in the cards for U. S. business in general and Westinghouse in particular. It consists of a very specific prospectus of the coming year and a more general forecast of the next five years. At least once a year it is revised and extended another year into the future.

The biggest single element in the look-ahead is the outlook for U. S. power capacity. That is partly because

power is a good indicator of general business conditions, partly because generating equipment is Westinghouse's biggest line.

The growth of the power industry—past and prospective—probably has conditioned Westinghouse thinking more than any other single thing. Price said when he announced the latest expansion, "In the electric power industry—our largest customer—equipment requirements double every ten years, historically."

• **The Chips Go Down**—The final job of measuring specific proposals against the look-ahead yardstick falls to Price and the ten men who form his staff. These include the top vice-presidents, the treasurer, and the controller.

By the time a proposition gets this far, there isn't much question about its soundness. What Price and his staff have to decide is whether the proposal can be financed, whether it should move ahead of other proposals or behind them, whether it fits with other plans, and whether or not the timing is right.

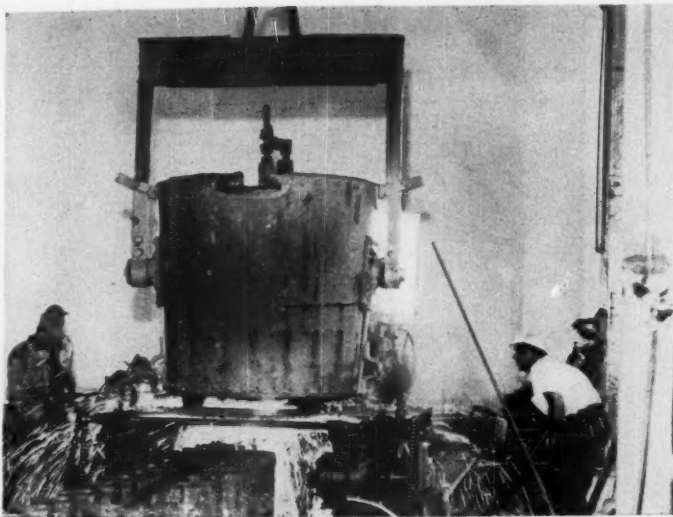
• **The New Program**—Each specific item in the \$296-million program announced last week has worked its way through this process. About \$133-million of it already has been cleared, project by project, over the last ten months. The remaining \$166-million has been blocked out in detail, but the final plans haven't gone to the directors for approval.

Altogether, there are 97 projects in the package. When they are finally finished, they will enable Westinghouse to do \$2-billion worth of business a year at capacity operation. The company's sales topped \$1-billion for the first time in 1950.

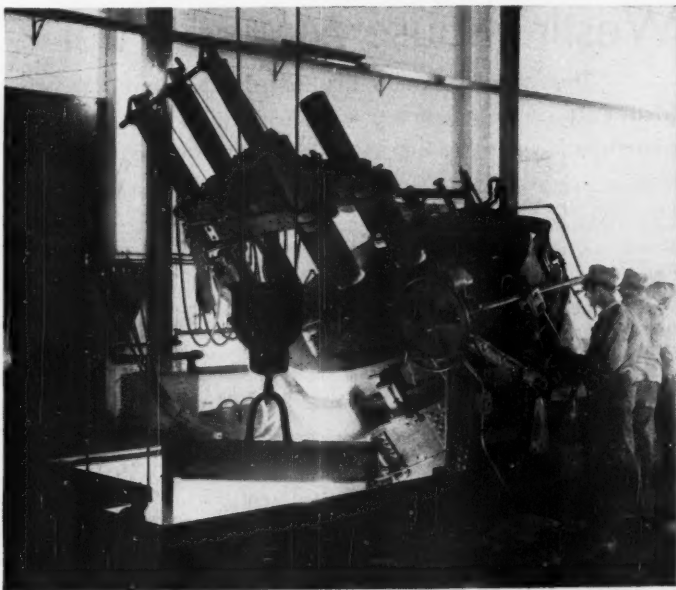
In its new program, Westinghouse will put about 48% of its money into expansion of industrial products capacity, 23% into consumer durables, 22% into general products, 7% into other capacity.

• **Consumer Goods**—The standout item here is that 23% for consumer durables. In a company that has always bet its big chips on the industrial end of its line, that is far more significant than its size suggests. And it's particularly striking at a time when consumer durable production is being hit hard by material restrictions for defense.

Here again Price's explanation gives an insight into what makes the expansion boom tick: "We may miss our timing by a few years, but we have absolute confidence that we are part of a dynamic, growing industry. Much of this program won't help us to produce for today's growing backlog. But even if we have excess capacity for as long as three years, we won't be wrong in the long run."



Defense Steel: 80 Tons a Day . . .



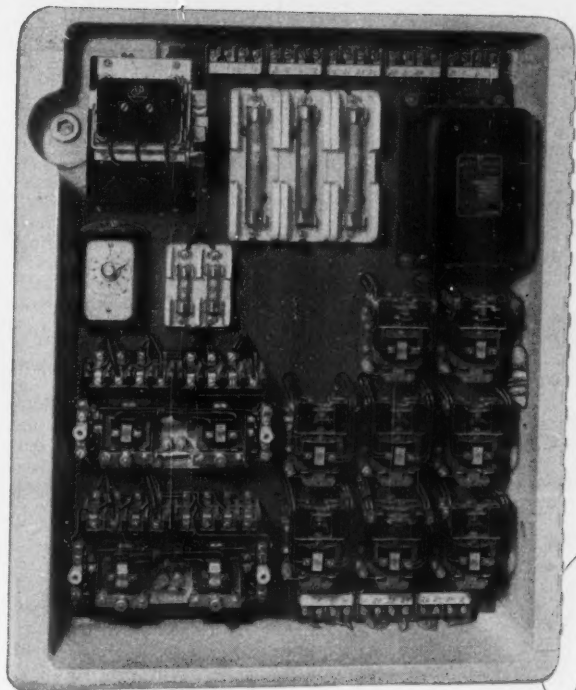
. . . From New Oklahoma Mill Furnace

Showering sparks of white-hot steel were the only fireworks when Oklahoma City's new Hoster steel rolling mill opened last week. But full-speed production will mean more high-grade steel for defense needs—50 to 80 tons a day.

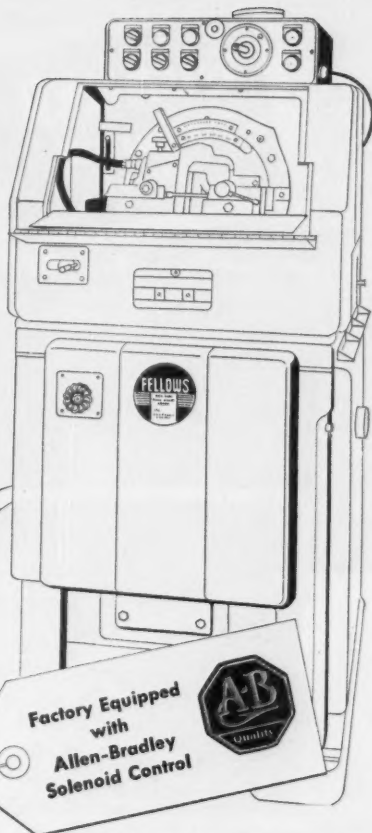
Hoster Steel Corp. expects to be turning out around 80% of this capacity by Oct. 15. The furnaces, started six weeks ago, will make several grades of

steel and 150 different sizes of ingots, angles, flats, etc., out of Oklahoma scrap, mostly from the oil fields and the farms. The mill will use ferromanganese and ferrosilicon to improve the quality of the steel.

Hoster will get an assist in its quest for scrap: NPA will spark a drive for the badly needed metal as soon as the regular crops are harvested.



Close-up of Control Panel



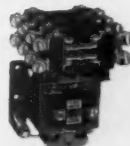
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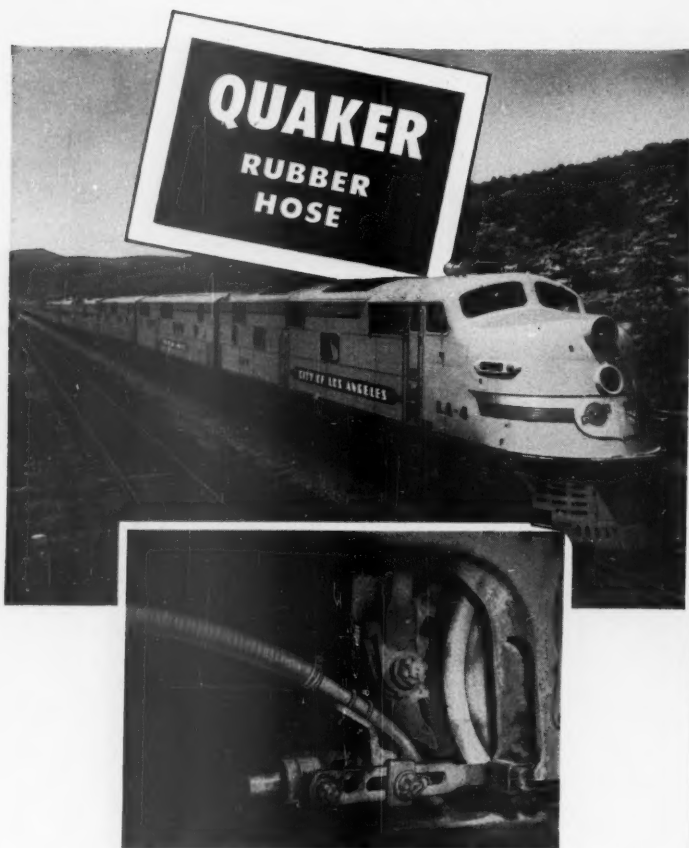
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BUSINESS BRIEFS

Hadacol hit bottom when the LeBlanc Corp. of Maryland, holding company for the Louisiana patent medicine company, filed for reorganization in bankruptcy. The company reported a net loss of \$1.8-million in the quarter ended June 30. Earlier in the week, the Federal Trade Commission had filed charges that Hadacol advertising was "false, misleading, and deceptive." FTC said Dudley J. LeBlanc was still in control despite last August's stock transfer (BW—Sep. 1 '51, p. 26).

Machine tools are up for grabs again next week at Air Force depots in Omaha, Neb., and Marietta, Ga. More than 5,000 war surplus machines are still in stock. Air Force contractors can borrow them free; others pay a low rental. Last month's session disposed of 4,107 tools to 300 contractors.

You'll be able to distinguish airmail pay from direct subsidy to domestic airlines from now on. The Civil Aeronautics Board this week started separating the two payments in its accounting. Of the total \$61.9-million paid to the carriers in 1950-51, about \$34-million was direct subsidy.

Heavy rains early this week eased the Pacific Northwest power shortage. Interruptible power was restored Tuesday to aluminum potlines.

Legal writs flew fast in New York State's effort to collect a new weight-distance tax on big trucks. Truckers got an injunction staying the collection of the tax on and after Oct. 1. Then the state got a show-cause order to have the tax declared constitutional.

RCA color television will be shown to the public in the next two weeks. Invited audiences will see the color telecasts in a New York theater. Previous showings were limited to public and industrial officials and the press.

Good tax news: South Dakota went against the national trend by cutting taxes \$8-million a year. The legislature eliminated extra taxes used to finance a \$21-million soldiers' bonus after World War II.

Fisher Body division of General Motors will build vertical turret lathes under subcontract with the Bullard Machine Co. of Bridgeport, Conn. The contract is the largest of its kind to date. Units are to be fabricated in seven Fisher Body plants in five cities, with assembly at the Pittsburgh plant. Plans call for up to 50 units a month.

CLASSROOM

in the clouds

► Nearly a year of intensive air and ground training is needed to qualify an Air Force student as a navigator. To speed up the training program, the Air Force now instructs groups of 10 to 14 men simultaneously in flying classrooms equipped with Sperry instruments.

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► Sperry navigational facilities provided are the Gyropilot®, its standard accessory, Automatic Approach Control, and flight instruments for attitude and direction. Fourteen repeaters . . . one at each student station . . . are controlled by the Master Gyrosyn® Compass. Thus Sperry—by providing the very latest aids to navigation—helps the U. S. Air Force develop new “men of precision.”



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WSB CHAIRMAN Nathan P. Feinsinger considers ways and means. His problem:

Mapping Policy in Disputes

Which dispute rates board's jurisdiction is still unsettled. But one thing is sure: If it doesn't threaten national defense and if conciliation hasn't been tried, it will get a fast brushoff.

How will labor disputes be handled in the controlled economy of the defense decade?

Some of the important ground rules are being laid down now by the Wage Stabilization Board (BW—Sep. 22 '51, p. 36). They are sketchy, because—up to now—the board has got only a handful of cases. The President put his executive order giving WSB fact-finding jurisdiction over critical disputes into effect for the first time only a month ago in the Utah copper shutdown (BW—Sep. 8 '51, p. 33).

• **The Tune**—WSB officials insist that they're still just playing by ear. But here are some of the rules and procedures that have been pretty well decided upon through cases handled already:

• WSB will brush off any dispute that doesn't have a major impact on the economy.

• Neither the President nor WSB

will consider a dispute that doesn't seriously threaten national defense.

• Neither the President nor WSB will look at a case in which federal conciliation hasn't been fully tried.

• No case will go to WSB unless both sides agree to a strike truce and resume production.

• **Terms**—These rules are firm in cases the President steps in on. Before he certifies such disputes to WSB, he insists that all tests be met. And as to the final point, he will invoke Taft-Hartley if the strike is not ended.

Of course, the same rules apply in cases where both sides in a dispute voluntarily seek WSB assistance in reaching a settlement.

Further, WSB will make no "decisions" in the voluntary cases unless both sides request it.

• **Tested Recipe**—Unlike World War II's War Labor Board, WSB has no

powers of compulsion. Of course, "recommendations" of a government body acting for the President often have the effect of binding decisions.

Here are the tests that served to establish the board's general rule of operation in handling disputes:

Importance to national defense: WSB got the strike of CIO workers against the American Smelting & Refining Co. plant at Garfield, Utah, in August. Obviously, any loss of copper production would have a drastic effect on national defense.

WSB got the dispute between CIO-UAW workers and 13 brass and copper fabricators, even though there had been no walkout. Again, national defense was the guiding requisite.

Prior use of conciliation: The Garfield copper case and the brass fabricators case had gone through full arbitration and federal conciliation before the President stepped in.

Strike truce must be called: WSB wouldn't take the nationwide copper strike involving the left-wing Mine, Mill & Smelter Workers, because the union officials declined to send the men back to work. So the President invoked Taft-Hartley.

Chances are slim that many disputes will pass through the White House and on to WSB unless there is a strike. And there is some fear that this puts a premium on striking. The circumstances in the brass fabricators case were considered unusual. The dispute was tied pretty closely to the copper strikes previously sent to WSB. A strike would not only cut output, but would affect some continuous processes.

• **Ways & Means**—After a dispute gets to WSB, how will it be handled? What's happened so far points pretty much to one thing: A tripartite group will sit. Yet in the American Smelting & Refining strike, the board set up a three-man all-public panel because, in the background, were other unions that were bargaining with the copper industry for wage increases.

This week in the brass dispute, WSB created tripartite panels.

Outside panels, instead of WSB members, will be used most of the time. But in major policy-setting cases—like steel and coal—WSB members themselves will sit from beginning to end.

• **The Big Question**—In the only recommendations issued thus far, WSB hasn't blazed any new trail. Whether it will set new policies in its "recommendations" in disputes remains to be seen. The first opportunity may come if steel negotiations reach a deadlock this winter. The biggest thing that came out of the old War Labor Board—the Little Steel formula—was, in the first instance, only a decision in the Little Steel wage dispute.

Food Processors

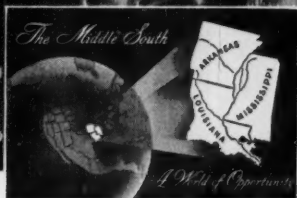
build prosperity for the Middle South

Food processors supply many ingredients for the stable prosperity of the Middle South. Directly, they employ 47 thousand people with an annual payroll of \$105 million. Many millions more are paid to farmers and fishermen of Arkansas, Louisiana and Mississippi for their varied produce. And, through such sizeable contributions, the processing industry stimulates all business in the three-state region.

Rapid growth in canning, freezing and other processing operations stems from leaders among producers and processors. Research spurred mechanization, diversification and broadened food markets. From this outstanding work grew enterprises where producers and processors work together as in the seafood industry of Louisiana and Mississippi; numerous fruit and vegetable areas; and centers of livestock, poultry, dairying and seed oil crops spread over the entire Middle South.

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Interior scene at a
Middle South canning plant



IN THE MIDDLE, Harry Bridges' leftist ILWU is eyed by Harry Lundberg (left) of AFL's seafarers, Dave Beck (right) of the teamsters.

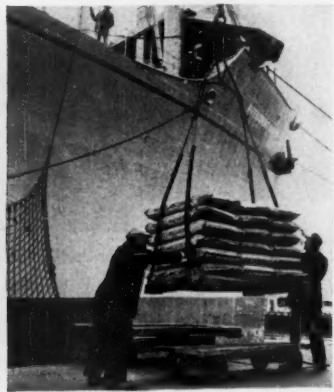


San Francisco Waterfront Battleground

(Story on page 34)

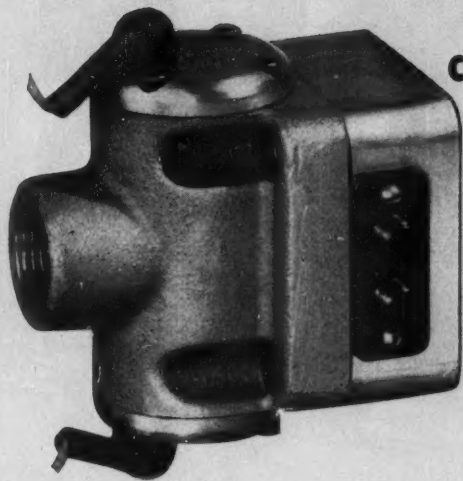


HIRING HALL is one potential issue in AFL campaign against ILWU. It holds workers close to ILWU by bringing them into the hall. AFL uses a "shape up" on its docks.



SLING LOAD is another. Seafarers may argue that they, not ILWU, should handle it.

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KREML *Hair Tonic*

PREFERRED AMONG
MEN AT THE TOP



ILWU MEMBERS were asked to break their left-wing ties as . . .

AFL Gangs Up on Bridges

Seafarers and teamsters, getting nowhere alone, band together to oust the longshoremen's union on the West Coast.

For three years AFL seafarers and teamsters tried to win over West Coast warehouses and docks. Working independently, their score was zero. Last week they joined forces to "drive out [left-wing] unions from our harbors, docks, and warehouses."

• **Their Target: ILWU**—Their target, of course, is Harry Bridges' International Longshoremen's & Warehousemen's Union and its small satellite unions. Pairing Harry Lundeberg's seafarers and Dave Beck's West Coast teamsters makes a strong team—well-heeled financially, and with strategic waterfront positions, experience, and leadership. Yet ILWU, strongly entrenched, looks well able to beat off the joint attack.

• **Employers in Middle**—Plans for the attack on ILWU (so far, it's all plans, no action) are getting worried attention from West Coast employers. They're

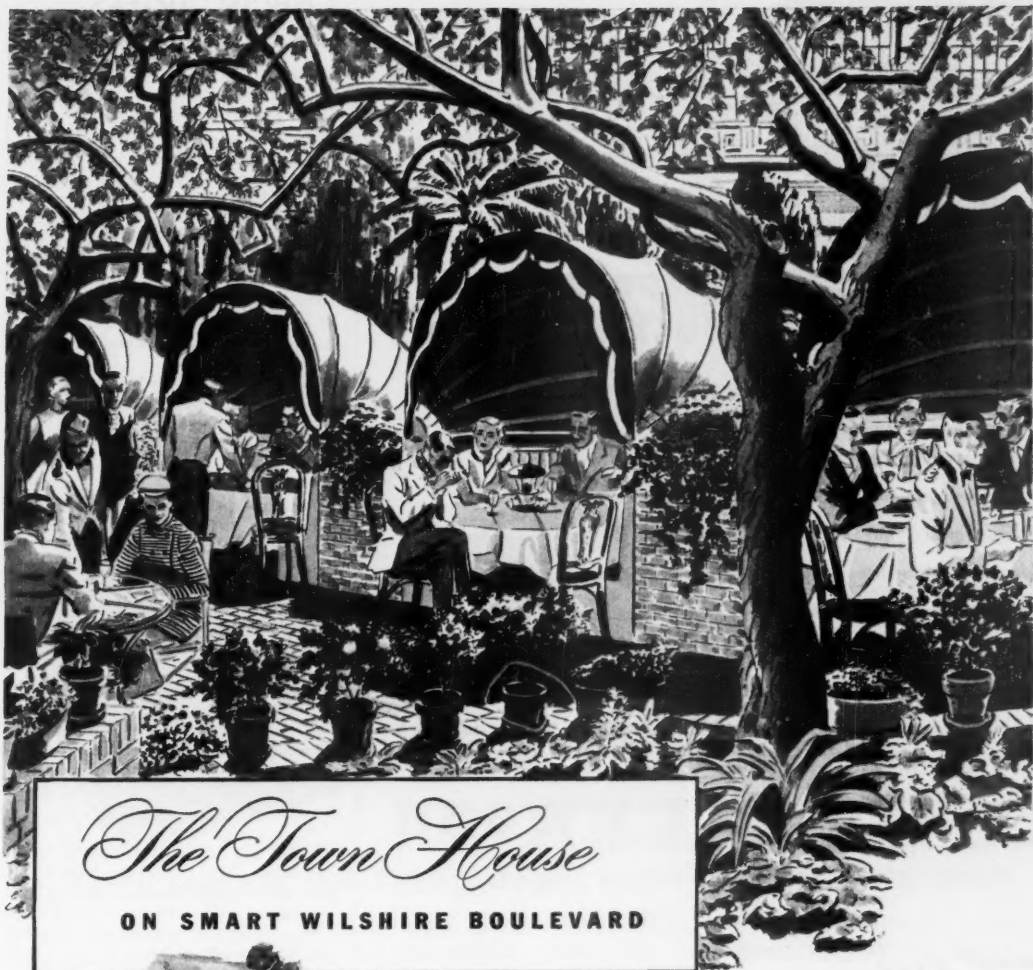
afraid of being caught in the middle of a rough, tough scrap.

The seafarers-teamsters blueprints call for using "all of labor's weapons" to "liberate" workers from left-wing unions. That means picket lines, boycotts, and tough waterfront tactics.

It also means a campaign to upset present even-keeled labor-management relations. In San Francisco last week Beck charged that Pacific waterfront employers have "made a deal" with Bridges.

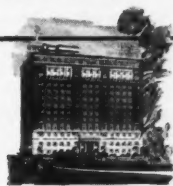
He demanded that employers break with Bridges or "bear the full responsibility" for labor troubles. At the same time, he called on ILWU members to repudiate the union and its "sellout" to employers.

Whether such a strategy is successful or not, it's bound to ruffle now-smooth labor-management relations.



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LABOR BRIEFS

Settlement of the two-month-old Caterpillar Tractor strike (BW—Sep. 22 '51, p37) gives 22,000 workers a 13½¢ raise, with another adjustment Feb. 1 to offset any c-o-l rise between June 15 and Dec. 15, 1951. CIO auto workers struck for 19¢.

Notre Dame games will be broadcast over labor station WCFL in Chicago with AFL's teamsters as sponsor. Teamsters are also dickering with WPEN in Philadelphia. Union plans to stress its public-service role in commercials.

Bread is bread, a New York court ruled recently in an unemployment-compensation case. It said a "specialist" in baking French and Italian breads can't collect jobless pay because he turned down a \$65-a-week job baking American-style bread. Earlier, a compensation board ruled that he could collect it.

CIO claims southern membership of 1-million now, up from 400,000 when its "Operation Dixie" got under way in 1946.

A libel judgment for \$3,000 has been handed down in Bristol, Va., against CIO's Woodworkers—which said in handbills that a former member was a "backslider, a coward, and a chiseler," and which pictured him bowing down to kiss the foot of his employer.

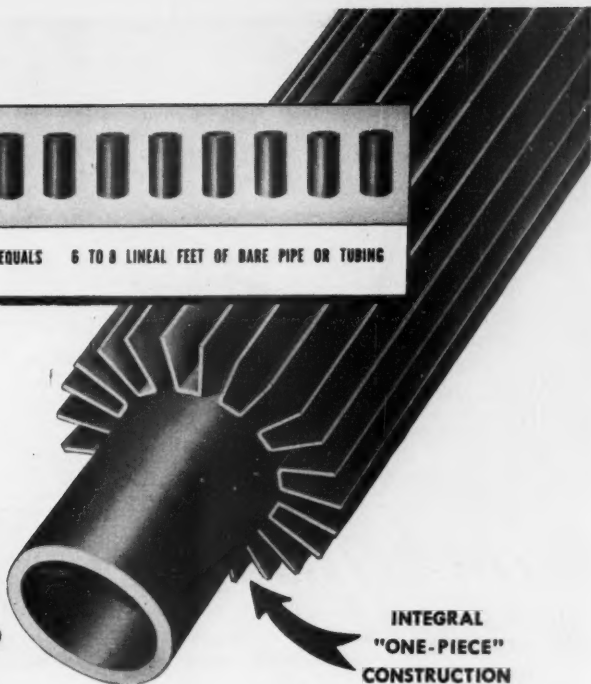
Straight pay hikes have brought workers more since 1939 than they could have got through escalator raises, James Brownlow told AFL's Metal Trades Dept. in San Francisco. He reported \$35.92 a week in raises in 12 years, said c-o-l increases would have brought in only \$21.32.

Carefree Oil Workers Spurn Strike Insurance

Nobody seems to want strike insurance in the Oil Workers International Union (CIO). So a plan set up by OWIU six months ago (BW—Mar. 3 '51, p128) is now dormant.

The plan would pay union members \$50 to \$100 a month if idled by a strike, at a cost of \$1.73 a month in premiums. Funds would be handled by the union itself, since no insurance company wanted to write such a policy.

When the plan was launched, the union announced that it would not become operative until 20,000 members signed up for the insurance. A campaign to interest locals in the plan got



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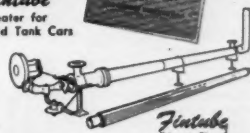
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Company
Address
City State

a small response at the start—then bogged down. The union still hasn't "sold" the insurance to 20,000 members.

According to OWIU, the big reasons are the steady pay that oil workers are getting now and the probability that strikes can be avoided for another year or so. Nobody seems worried about being off the job.

Although the insurance plan looks dead, it hasn't been dropped officially. If times change, it will be revived for another tryout.

Contract Puts New First On Benefit Demands

Employers trying to keep abreast of new union demands will profit from a reading of the new contract between the U.S. Metals Refining Co., of Carteret, N. J., and Local 837 of the International Union of Mine, Mill & Smelter Workers.

The contract provides that the employer will supplement compensation payments to workers injured in the plant. Eight days after a compensable injury occurs, the company will add to compensation benefits a sum bringing each employees' injury payments up to what he would have made had he been at work for 40 hours at straight time. This compensation supplement will continue for 13 weeks if the worker is unable to return to his job before that time.

• **Just the Beginning**—The Carteret contract covers approximately 1,700 employees and was part of a 21¢-an-hour settlement. The union says that it will be going after similar concessions from other employers it has under contract, and it can be expected that other unions will take their cue from the MM&SW on this fringe.

When wages are controlled and established fringe benefits are regulated, labor unions have a tremendous stimulus to be inventive. They contrive and press demands that, because of their novelty, are not covered by stabilization rules. MM&SW is congratulating itself for opening at Carteret such a "new and important area of company responsibility."

With employer responsibility to supplement federal old age payments now widely established through industry, and with a move now on to get employers to make additional contributions to workmen's compensation payments, the next area for exploration and bargaining may be unemployment compensation. Don't be surprised if your union proposes that you contract to supplement state unemployment compensation benefits when your employees are laid off.



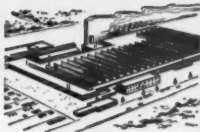
What it takes to cool a tank engine!



MANAGEMENT



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Our **Armed Services** wisely leave this "assembly job" to private industry. When seeking prime contractors, they look for companies which can best serve as industrial "clearing houses" for the thousands of different skills necessary to build modern weapons.

The company selected must then evaluate and use the skills of thousands of sub-contractors. A typical prime contractor, now engaged in building tanks,

issues over 17,000 sub-contracts distributed among 5,000 separate firms! As one of these firms AMF is producing cooling fans for Army tanks.

AMF is proud to be a part of this system, both as a prime contractor and as a sub-contractor. In either capacity, we feel our *skill* and *speed* is best utilized to help keep America militarily strong and economically sound.

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or mounted on floor



STRATEGISTS Russell R. Lasley of UPWA (left) and Fisk University's John Hope II map out program to eliminate race bias in the packinghouse union.



LASLEY takes his case right to the locals. He explains why . . .

Union Fights Discrimination

Two years ago, Ralph Helstein, attorney-president of CIO's United Packinghouse Workers of America, decided that the union's antidiscrimination policy wasn't working. There was still a lot of race bias in the industry.

At the union's 1950 convention, he named Russell R. Lasley—a Negro vice-president and top-flight UPWA organizer—to organize an educational campaign to fight discrimination in the union.

• **The Score**—Now Lasley has chalked up his achievements:

• Separate meetings of white and Negro members have been entirely eliminated. (The union turned down a

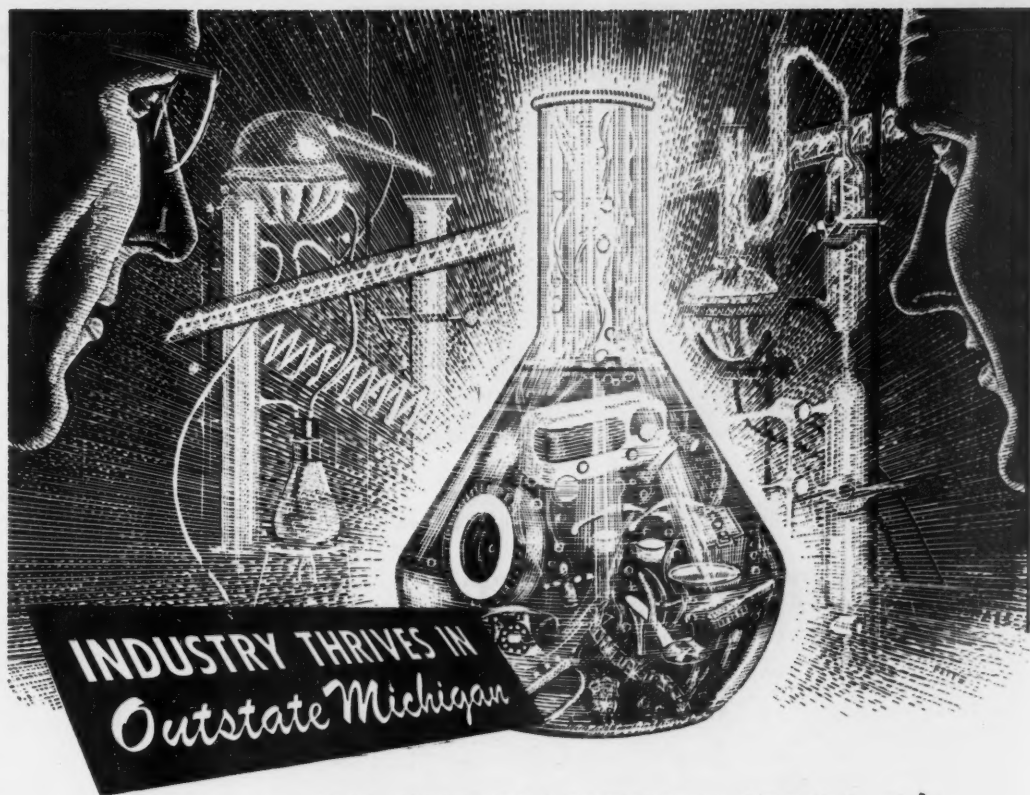
charter request from 2,000 Jacksonville (Fla.) packinghouse and allied workers because they held out for separate meetings.)

• Twelve plants in Chicago, St. Louis, Kansas City, and Sioux City did away with separate locker rooms for whites and Negroes.

• Food facilities of three other plants were opened to Negroes, who previously had to carry lunches or go hungry.

• Separate drinking fountains were eliminated in a few plants. (UPWA says this is one of its toughest problems.)

• Fair-employment-practices clause



THE CHEMICAL INDUSTRY PROVES IT!

HERBERT H. DOW leased a brine well in Midland, Michigan, in 1890. He had developed a better way of extracting bromine from brine.

This was the beginning of the Dow Chemical Company. Today Dow's Midland operation comprises more than 400 buildings and manufacturing units, accounts for more than 600 products. In addition Dow conducts large manufacturing operations at Bay City and Ludington, Michigan. Cliffs Dow Chemical Company, a Dow subsidiary, operates a plant at Marquette in the Upper Peninsula and Dow Corning Corporation, an associated company, manufactures silicone products at Midland.

Dow also has large manufacturing divisions in Texas and California, and through other subsidiaries and associated companies operates in many other states and in Canada.

Another young chemist, Henry H. Reichhold, leased part of a paint plant in Ferndale, Michigan, in 1925 so he could do research work at night in synthetic resins. Soon he headed

a company, Reichhold Chemicals, Inc., that was and still is the world's largest producer of synthetic resins. The little plant in Ferndale has grown into a huge production center. There are 23 other Reichhold plants in many parts of the world, producing not only synthetic resins but also chemical colors and industrial chemicals.

Other chemical companies that flourish in Outstate Michigan include the Michigan Chemical Corporation in St. Louis, now engaged in a \$3,000,000 expansion program; the Great Lakes Chemical Corporation, Standard Lime and Stone Company, Morton Salt Company and Manistee Salt Company, all in Manistee; and the American Cyanamid Company, the Hercules Powder Company, and the General Chemical Division of Allied Chemical and Dye Corporation, all in Kalamazoo.

The chemical industry is one of many industries that thrive in Outstate Michigan. Quite possibly this is an ideal location for *your* industry.

Check These Advantages of Outstate Michigan

- ★ Exceptionally High Percentage of Skilled Workers
- ★ In the Great Market Center of America
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"Now we have the safest, best-looking floors we ever had... yet we cut maintenance time 65% and material cost 50% by using Multi-Clean Asphalt Tile Preserver and the Multi-Clean Method," says the Seeger Maintenance Director.

Over 20,000 sq. ft. of new and old asphalt tile in offices, plant hospital and cafeteria are now given this one simple treatment... only four times a year. Waxing applications—formerly needed 2 or 3 times monthly—are no longer necessary! Yet the floors retain a long-lasting, non-slip, glossy finish even under heavy traffic... and Multi-Clean Asphalt Tile Preserver has actually restored the original color to old, worn tile!

Maintenance is economical because ordinary damp mopping keeps the floors clean... and occasional steel wooling with a Multi-Clean Floor Machine keeps the surface bright and lustrous.

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| <input type="checkbox"/> Nine-Job | <input type="checkbox"/> Wet-Dry | <input type="checkbox"/> All-Purpose |
| <input type="checkbox"/> Floor Machine | <input type="checkbox"/> Vacuum | <input type="checkbox"/> Scrubber |

NAME AND TITLE.....

COMPANY.....

ADDRESS.....

CITY.....ZONE...STATE.....

**"... The doorbell check
showed that 'everybody'
didn't..."**

DISCRIMINATION starts on p. 40

was written into each new contract.

Of course, racial friction isn't limited to the packinghouse union, but UPWA has been most active in trying to stamp it out. Of its 150,000 members, 50,000 are Negroes and 10,000 Mexicans. UPWA is attacking the problem from the inside out: It's getting rid of bias within the union, then attacking it where it exists outside the union.

• **Higher Guidance**—Lasley went to one of the country's top race-relations study centers for guidance. Last fall he asked help from Fisk University, a Negro university in Nashville, Tenn. John Hope II, a specialist in industrial race relations at Fisk, agreed to help UPWA in its fight against bias.

• **Questionnaires**—First step was to find out how much bias persisted in the union—where and in what form. Hope and his UPWA aides sent questionnaires to officers of 350 locals throughout the country; searching questions dealt with race relations in the union, in contract plants, and in the community.

The questionnaires were returned "blind" to Hope and the Social Studies Institute at Fisk; officers didn't sign their names, and neither national union officials nor local members saw the returned questionnaires. Fisk analyzed the answers.

• **Double Check**—As a follow-up, Hope and crews of volunteer aides are making house-to-house spot checks in each community surveyed through the questionnaires. Investigators come generally from church and civic groups, social-service agencies, or local colleges. So far, the spot checks have pretty well tallied with answers given to questionnaires.

• **Basic Information**—When the results are in for a local or community, UPWA gets a report. It shows:

• What discrimination exists in the local.

• Whether any plants under contract with the local discriminate in hiring, in upgrading and promotions, or through separate locker room and eating facilities.

• Community discriminatory practices—in hotels, restaurants, theaters, and business places.

• What the local is doing to break down prejudices.

• **Tailored Program**—With all this information, UPWA can tailor an educational program to fit the need.

In the Kansas City report, for in-

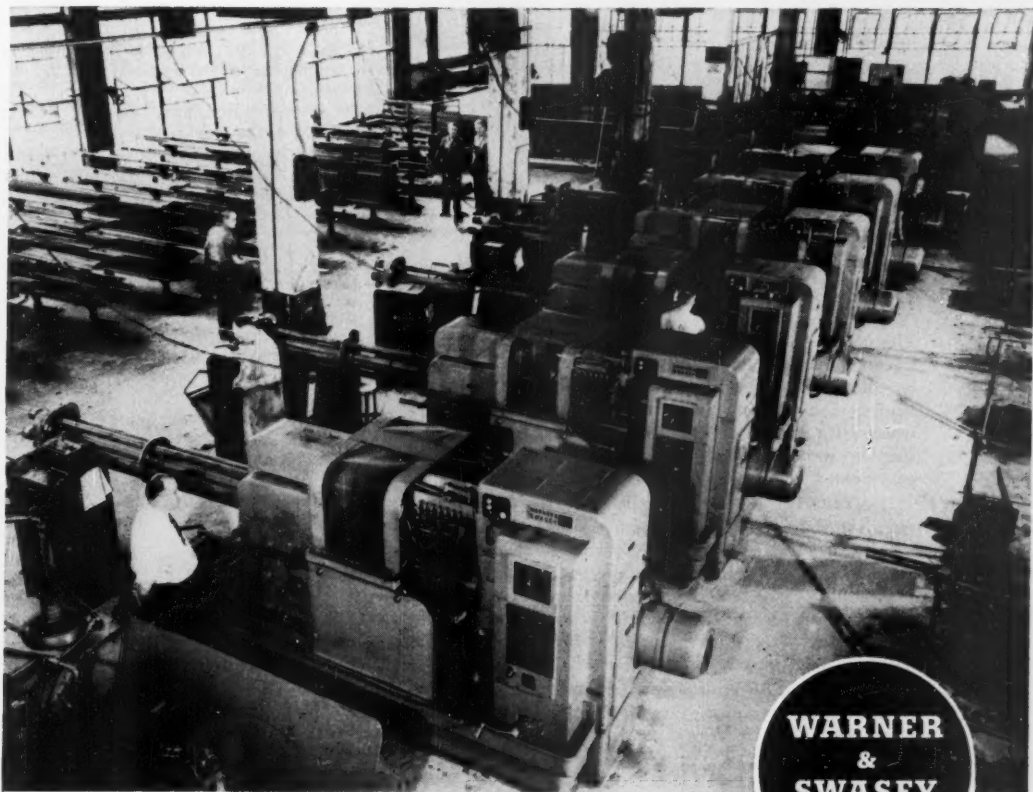
One manpower problem solved

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● At Otis Elevator Company, 6 Warner & Swasey 5-spindle Automatics replaced 17 older machines—and 6 critically needed men were released to work elsewhere in the plant.

These automatics are used at Otis for short runs on specially machined parts—studs, bolts, nuts and other screw machine products—required for custom-made elevators. And only 3 men are required to set up and operate these 6 automatics—an important point to consider in today's tight manpower market. Parts are now more uniform, and are produced at a higher rate.

If manpower is one of *your* problems—or if you need new machines to keep pace with present day production demands—have your Warner & Swasey Field Engineer show you just how automatics can fit into your production setup.



*The Warner & Swasey 5-Spindle Automatic line at the
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stance, the union says it discovered "structural weaknesses of our executive boards, steward bodies, and committees" where the antibias program was concerned. The "structural weaknesses" stymied the union's efforts to put across its antidiscrimination program. When the organizational structure was strengthened, results began to show up quickly.

Mainly, locals began cracking down on discriminatory practices in plants and in the community—practices tolerated before because, local officials said, "they had always been that way, and everybody wanted them that way." The doorbell check showed that "everybody" didn't.

• **Contract Requirements**—UPWA is not going to negotiate with any packing company that won't agree to "give fair and reasonable consideration to any (job) applicant regardless of race, sex, color, creed, nationality, or membership in the union."

Until the UPWA survey pointed out that it had a white-only policy, Reliable Packing Co., Chicago, got by without a protest from the union. It had dealt for seven years with a stockyards local, got new employees by asking its employees to recommend friends or relatives.

When Reliable's contract with UPWA ran out several months ago, Helstein refused to sign any new agreement that wouldn't bar job bias. When a strike threatened on the issue, Reliable gave in. Since then, six Negroes have been hired.

John E. Thompson, president and son of the founder of Reliable, is satisfied with the company's liberalized policy. "When the plant was founded in 1921, Negroes were not considered satisfactory as workers," he said. "Times have changed. Our new Negro employees are doing very well. There is no tension in the plant, and no discrimination." So the state board acted, ruling the local must admit Negroes.

• **Behind UPWA's Interest**—UPWA's drive against bias has cost the union \$15,000 so far. It wasn't undertaken for social reasons only. Economics are involved, too. The union says that strikes were broken by employers in 1904 and 1921 by using race as a weapon—and racial issues might crop up again.

Most unions are now committed to an antidiscrimination policy. That was pointed up recently when a hearing panel found a Hartford (Conn.) local of the International Brotherhood of Electrical Workers (AFL) guilty of discriminating against Negro applicants for membership. Since only IBEW members stand much chance of getting jobs in contract plants, the whites-only policy barred Negroes from employment, too.

NEW OIL FIELDS

EDITORIAL REPRINTED FROM *The New York Times*

THE ROLE OF THE PROFIT MOTIVE

This editorial appeared recently in one of America's great newspapers. THE NEW YORK TIMES notes particularly the many skills and the great risks involved in the search for oil.

The development of new sources of oil is only one phase of oil company rivalry. The oil must be taken from the ground, refined into finished products, transported by pipeline, tanker, truck or tank car and marketed where and when it is needed. Every step of the way, every day, oilmen try to win more business by doing these jobs better, faster, more efficiently.

As THE NEW YORK TIMES says so emphatically:

"...the role of the profit motive in inducing socially useful action is of primary importance, a fact which our people and our legislators might well keep in mind."



IVERSEN NO. 1—When this well, shown with its "slush pit," came in near Tioga in the Williston Basin, North Dakota became America's 27th oil-producing state. It was 29 years ago that a single oil company began the long search for oil in North Dakota. Today many oil companies, big and little, have leased over half the state's acreage for drilling, in the hope that the region will prove to be a major oil producer. Oil companies are getting ready to spend millions to find the answer.

"**W**HAT may well be the beginning of a new major domestic oil source in the northern Middle West is indicated by two recent important finds 100 miles apart, one last April in North Dakota and another in the past fortnight in Montana. For several decades this country has depended heavily, though not exclusively, upon southern and western areas—such states as Louisiana, Texas and California. If these new finds in North Dakota and Montana presage the opening of comparable rich fields they are of great importance.

"The mounting number of cars and oil heaters in this country is steadily increasing our consumption of this material, while from a global point of view the shadows over the future of oil production in the Middle East, particularly Iran, make it most desirable to increase production from more certain sources, as in this country, as rapidly as possible.

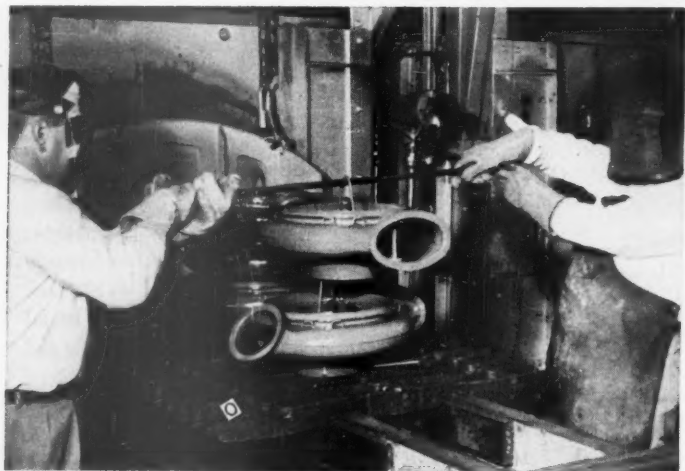
"In our gratification over these new finds we should not lose sight of the factors which made it possible for oil to be discovered at depths of 7,000 to 11,000 feet underneath the earth. The contributions of geologists, drilling technicians and related specialists are, of course, of the highest importance, for they make possible the location and then the reaching of this buried treasure. But important, too, are the enterprise and the willingness to bear risks which motivated these efforts. Wells that find oil are well publicized, but the large number which are no more than dry holes in the ground are recorded only in red ink in private ledgers.

"The men and organizations who search for oil at fantastic depths risk millions in such ventures, and frequently lose them. But they continue even after repeated disappointments because on balance profits can be made if a reasonable proportion of successes is attained. In this activity, as in many others, the role of the profit motive in inducing socially useful action is of primary importance, a fact which our people and our legislators might well keep in mind."

PRODUCTION



1 Molten raw materials of the ceramic coating are poured into water. When they hit, they shatter into small particles, called frit.



5 The part is finally baked in a furnace at a high temperature. Before this step, the coated part is dried in an oven.



2 The frit, along with a binder and water, is put into a mill and churned.

Ceramics: They

There are two ways to make a jet engine: One is to make it like a piece of jewelry; the other is to make it like your bathtub at home—using a ceramic coating. In the far away future, it may even be made like a dinner plate.

Ceramic coatings, themselves, are nothing new. Our homes are full of them. Take the enamel-like coating on our refrigerators, or the glassy, porcelain surface on the kitchen sink. Every day we handle things made entirely of ceramics—vases, tiles, dinnerware.

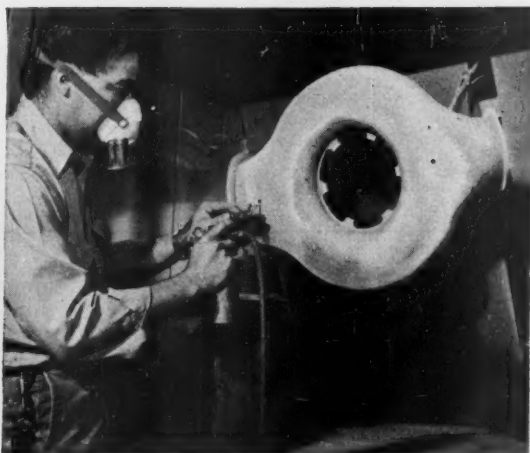
These ceramics take different forms, but they all have a common base—clay or earthlike materials. For the coatings the clay substance is mixed with water and a binder, to keep the earthlike particles together, and then applied in its liquid state. The pottery and other items are formed from wetted clay, and then baked.

But ceramics haven't spent all their time in the kitchen. They've made a place in industry, too. They're used to line steel furnaces, for one thing, because they withstand very high temperatures. And parts of the big transmitting tubes at radio stations are made of ceramics.

• **Industry Wants Them**—Now ceramics are popping out with new and spectacular industrial uses. In the jet aircraft industry, for instance, more and more engine manufacturers are shifting from alloy to ceramic-coated steel parts in jet turbines, for two main reasons: (1) because ceramics are proving a well-



3 The part to be coated is cleaned by sandblasting. Another way to clean it is by etching it in acid.



4 The ceramic coating is sprayed, like paint, onto the part. Or the part can be dipped into the ceramic instead.

Help Steel Stand Jet Temperatures

come substitute for the critical high-grade steels and (2) because ceramic surfaces can stand more heat even than many of the alloys—an important factor as the thrust of the jet engine is increased.

Besides, ceramic-coated parts can be made of lower-grade metals that are cheap and plentiful.

Actually, ceramic-coated parts got their start in the last war—on piston engines. But now that production of jet engines is going up, the program is taking too big a bite out of the supply of high-grade alloy steels. And as the thrust demanded of jet engines goes up, its parts must be made still more heat resistant. Richer alloys would have to be developed; but ceramics already fill the bill.

• **A Drawback**—So much so, in fact, that one research center—Battelle Memorial Institute—has a project that's devoting all its time to finding ways to improve ceramics' inherent qualities. They do have one basic weakness—they break under too much pressure. "If we know why ceramics break," says W. H. Duckworth, assistant supervisor of Battelle's ceramics division, "then we can determine how they're going to behave under stress." And if Battelle can find the answer, chances are that solid ceramic instead of ceramic coated over metal can be used in engines, which will mean still greater thrusts.

• **Proof of the Pudding**—But you can't take away from ceramics the credit for

big savings in alloys. Take the combustion-chamber liner of a jet engine. The average-sized engine has eight of them; larger ones, 12 or 16. Service life of the liner averages about 200 hr., and one standard specification calls for an alloy that has 78% nickel. So, even for one engine, its combustion chambers and the replacements add up to a lot of nickel. Solar Aircraft Co. thinks it can make liners from steel with only 8% nickel using a ceramic coating.

Proof of the ceramic-coatings success story: One engine parts manufacturer—Ryan Aeronautical Co.—has the first volume order for ceramic-coated exhaust systems for 600 Pratt & Whitney engines. Ryan is turning over its facilities to producing ceramic-coated parts—using a formula worked out by the National Bureau of Standards.

• **Secret Formula**—Solar has activated its first plant for turning out coated parts. Solar used the plant before for research and development of these parts. But the huge demand for coated parts made by Solar's process practically forced the company into mass production. Solar has developed a special formula; the ceramic materials used are strictly a family secret.

Here's how Solar's process works: The ceramic materials are mixed well, then melted in a furnace, producing a glasslike mixture called smelt. When the smelt reaches a molten state, it's poured into cold water and shatters into small pieces, called frit. The frits

are added to a binder and water, and the mixture is ground for hours. Out of all this comes a ceramic coating that looks like paint.

• **Sprayed or Dipped**—A thorough face-cleaning job has to be done on a part before it is coated. Solar does it by either acid etching or sandblasting the metal surfaces. Then the coating is either sprayed on, or the part is dipped in the mixture: Solar uses both methods. Finally, the coated part is shoved



Under high heat, ceramic-coated steel (left) is like new; uncoated (right) withered.



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*"... they're paving the way
for better engine performance . . ."*

PRODUCTION starts on page 46

into an oven to dry, then fired in a furnace to develop a glaze.

Right now, more than one coat has to be applied. But Solar aims to cut that down to one coat eventually—in order to speed up the operation and cut costs.

• **Paving the Way**—That will chalk up another mark in favor of the coatings. Right now, they have another big advantage, besides conserving the critical alloys—they're paving the way for better engine performance. What makes the thrust of a jet go up is increased operating temperature. The metals now used in jet engines hold the internal temperature down to an efficiency of about 23%. John V. Long, Solar's research director and father of its process, thinks that ceramic coatings can raise the temperature, increase the over-all efficiency of the engine.

Test results on coated steels at the higher temperatures back up Long's prediction. Solar has tested coated stainless steels for hours in temperatures 300F higher than the hottest recommended level for the bare metal. In another test a half-coated, half-bare piece was fired at 1,850F for 300 hours. The coated half came out of the test as good as new. But the uncoated half shriveled to half its thickness.

• **Fuel Economy**—Some aircraft manufacturers have uncovered even other advantages with ceramic-coated parts. One found that, if leaded gasolines are used to power a jet engine, coatings prevent the lead in the fuel from attacking metal surfaces.

What's more, coatings on parts that are exposed to the flow of fuel also increase the fuel economy. The smooth surface of the coating cuts down the resistance to the flow of gas, while the bare metal soon loses its smooth finish after it's exposed to hot gases.

• **Limited**—But the ceramic coatings, like the alloys, have their drawbacks. Their basic weakness limits them to use on parts, such as supercharger boxes and cowl flaps, where strength isn't all-important. They'll do a good job as long as they are reinforced by the base metal of a part, but can't stand alone in a jet engine as yet.

Duckworth explains the problem of ceramics this way: If the industry could replace the coated-metal parts with solid ceramic ones, it could get the benefit of a possible 1,000F to 2,000F increase in operating temperatures and, consequently, a proportional boost in thrust. But before they can use solid



Allison Turbo-Prop Engines Power 3 New Cargo Planes—

- ★ The Lockheed XC-130
- ★ The Douglas R6D
- ★ The Lockheed R70

While testing continues with the first U.S. Turbine Transport—the Allison Turbo-Liner, built by Convair—military contracts have been awarded for the installation of Allison Turbo-Prop engines in three additional types of transport aircraft.

★ The Lockheed XC-130—a U.S.A.F. four-engine medium cargo plane—is the first military transport ever designed originally around Turbo-Prop power. It won U.S.A.F. design competition over five other makes and the selection of Allison engines

represents another first for Allison in the development of turbine transports in this country.

★ The new Navy-sponsored R6D is a modified configuration of the world-famous Douglas DC6A Liftmaster.

★ The Navy R70 is the new turbine version of the Lockheed Super Constellation.

Allison Turbo-Prop engines were selected for all three aircraft because they develop more power with less than half the weight of present engines in this power class.



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chooses
KOPPERS POLYSTYRENE 81
for a
new molding technique

RECENTLY, Scripto engineers developed a new injection molding technique which simplifies manufacture of the Scripto pencil. In the past, the pencil was made of metal, and many separate operations were required to form and tip the pencil barrel. Now, the pencil barrel is injection molded. Internal threading is accomplished by use of long, narrow, retractable cores. When the molding cycle is complete, the cores are retracted. The barrels are threaded and completely formed in this one simple operation. This new technique means faster production, lower cost and a better product.

Scripto engineers found that the excellent molding qualities of Kop-

pers Polystyrene 81 were unequalled for this delicate operation. Its dimensional stability and ease of molding make possible faster cycles and fewer rejects. And its clean, brilliant colors add greatly to the appeal of the finished product.

Technical data on the molding characteristics of Koppers Polystyrenes are available upon request. As always, we want to work with you to obtain the best results from your use of plastic molding materials . . . to solve your particular molding problems (with special attention to military end uses) . . . and to design new products to be made from Koppers Polystyrene when the supply situation again becomes more normal.

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AND MANY BETTER PRODUCTS POSSIBLE



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ceramic bodies in jet engines—and Duckworth puts special emphasis on this—engineers must design an engine that will get around the weakness of ceramics.

• **Needs Research**—One trouble is that the factor of strength doesn't apply to ceramics in the same way that it does to alloy steels. An engineer can't say that a piece of ceramics will break at a given stress: There are too many variables that affect a ceramic. Battelle's research has learned something about the influences of these variables. But it hasn't learned enough to generalize about them.

Battelle says that it's a long-range project that may take five or 10 years. But the time and costs that would go into ironing out an engine that could use solid ceramics would be justified by its increased efficiency.

• **Peacetime Uses, Too**—Now that ceramic coatings have reached the production phase, Solar has also begun to think of them as a peacetime business. Some new civilian uses for the coatings have come up during its research: burner and oven parts for stoves, furnaces of all types, and countless industrial applications that involve high temperatures and chemical corrosion. The commercial uses, however, must wait until the military needs are satisfied.



Suit for Rockets

Fueling a rocket-powered aircraft is just as dangerous as flying one. So the Air Force's Materiel Command has tailored this protective clothing for personnel who handle the acid fuels used by rocket engines. An outer shell of cotton fits over a coverall of plastic and glass fibers. To avoid overheating, the cotton can be saturated with water.

PORTRAIT OF

Preparedness



Tinnerman Products, Inc., Cleveland, Ohio
Architects: McGeorge-Hargett & Associates
Builders: The Sam W. Emerson Co.

The new home of **SPEED NUT** fasteners is a combination of practical planning and architectural artistry, a design-for-efficiency, the last word in modern production and management facilities. But its keynote is an obvious *preparedness* to meet the challenges and opportunities presented by changing economic conditions.



The new Tinnerman building is designed for *flexibility*. Most of its interior space, for offices and factory enclosures, is subdivided by Mills Movable Metal Walls. Pictured at the left is a typical executive office equipped with metal and glass partitions.

Mills Movable Metal Walls are solid, attractive, insulated and sound-proofed. Easily erected, they require practically no maintenance and can be moved—*quickly, conveniently and at very low cost*—to fit any new layout or change in space requirements. Changes can usually be made overnight or during a weekend, without interrupting normal business routine.

This maximum mobility with minimum labor is the result of the *demonstrably superior quality* of Mills Movable Metal Walls, developed through more than 30 years of accepting complete responsibility for their design, construction and installation.

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J. H. Fadden
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OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

New Auto Tricks

Boeing's spark plug is designed to eliminate engine deposits; Bendix brake pedal will put more bite in brakes.

Metal shortages are forcing cutbacks in automobile production. But they're not putting a damper on new gadgets for autos. Here are a few that were just announced:

- Boeing Airplane Co.'s new spark-plug design keeps itself free of engine deposits and makes possible a lower-octane-number gasoline.

- Bendix Aviation Corp. has a new power-assist device to ease the driver's braking chore.

- Boeing's Spark Plug—The new spark plug gets its fouling resistance from a small chamber built over its business end. The spark ignites the air-fuel charge in this small chamber, then sends a flame jet into the engine cylinder. This flame fires the combustible mixture in the cylinder. Keeping the plug electrodes in this little shell shelters them from combustion products formed in the cylinder. That's why they don't foul up so quickly.

Conventional plugs tested in a 1938 car fouled up in 150 mi. to 170 mi. Boeing's plug showed no fouling after 4,000 mi.

The new plug also gives the motorist a bonus he can cash in on in one of two ways. If he uses premium gasoline and adjusts the spark, he'll get more power from the engine. If he goes to regular fuel, he won't lose power or develop knock in his engine.

But don't run to your nearest auto parts dealer to buy a set of these plugs for your car. Boeing still is undecided whether to place the plug or to license others.

- Bendix Break—You can toss the brake pedal as you've known it into the graveyard to join the clutch pedal and the conventional gear shift lever. The Bendix brake pedal, part of its Treadle-Vac system, will look a lot like your accelerator pedal, except that it'll be hinged in the front instead of the back. And the pedal will move only 3 in., instead of 6 in. as in your present car. You'll be able to shift your right foot from accelerator to braking movement in about one-fourth the time and cut 6 ft. from the stopping distance at 60 mph.

A major car maker will introduce it in its 1952 model, and several others are considering it.

To get the short pedal travel, Bendix ties a vacuum cylinder into the hydraulic brake system. The booster supplies about half the braking effort, your foot the other half.

ANOTHER **AMERICAN Brake Shoe** COMPANY PRODUCT THAT CUTS THE COST OF WEAR



these 3 inches
can save or lose
lives and loads

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Sure stop? Or sudden death? The Pedal Blok brake check may mean the difference . . . to you!

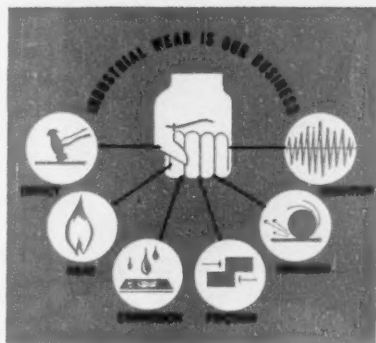
How? By showing up faulty brakes *before* they cause an accident. The mechanic places the Blok under your pedal and steps on the brake. If the pedal hits the Blok, *something's wrong!*

The "delayed action" of improperly adjusted brakes . . . worn linings . . . scored drums . . . leaking brake system:—all are commonplace hazards that most drivers don't notice . . . until too late. Out of every 10 cars, 7 need brake work. Yet many motorists put off getting their brakes fixed merely because *they don't know* their brakes are bad.

For instance, do *you* know if your brakes are really safe?

Getting the right answer costs you nothing. Simply drive in to your American Brakeblok dealer and make the same Pedal Blok check that many police inspection departments use. See for yourself whether your brakes need attention . . . find out in time what is needed to safeguard your life.

If you need new lining, use American Brakeblok . . . the safety brake lining. Car, truck and bus manufacturers use it for original equipment. Thousands of dealers sell it for replacement. See your American Brakeblok dealer and get your brakes checked today.



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BAKING is tricky business. Additives are needed for best results. Latest wrinkle is . . .

For Fluffy Bread, Try Fungus

Bakers are men of many woes. Their product is temperamental. Sometimes it won't fluff right; the dough sticks to the machinery; it gets stale too fast; it doesn't get white enough.

To beat all these raps, or at least to control them, the baker has been using various chemical and natural additives. And in time that got him in trouble with the Food & Drug Administration. A year ago FDA proposed new bread standards that did not permit the use in anything that called itself bread of synthetic chemical emulsifiers and softeners such as polyoxyethylenes and monostearates. FDA suspected these of being toxic. Tests are still going on, but the chances are that the standards will be adopted by the Federal Security Agency, parent of FDA.

• **On the Market**—But the bakers are already wiping away their apprehensive tears. For a new additive has just come on the market, comfortably inside the FDA rule and said to pass multiple miracles in the making of bread. The newcomer is a first cousin of penicillin; it's the first fungal enzyme supplement for bread to become commercially available. The name: Magna-Zyme, put out by Sche-Rose Corp., of Dallas. Here are some of the things it can do:

• The fungal enzyme cuts down the chances of making a bad loaf of bread. The why of it: Millers add malt to flour to improve edibility and speed fermentation. But no two mills add the same amount, so the baker has to

add some more. It's guesswork, and he can guess wrong. Fungal enzymes eliminate malting at the bakers; they automatically compensate for variations in the mill malting.

• Like the chemical softeners, fungal enzymes slow the staling process. That's because they retard the crystallization of starch.

• Bread made with fungal enzyme looks whiter and fluffier—hence larger in volume. By doing an improved job of breaking down large starch molecules into smaller sugar components, the enzyme causes the little holes in the bread to be smaller, more uniform, and better reflectors of light. At the same time, the dough's resistance to swell (called gel strength) is reduced. The fluffier the loaf, the larger it gets.

• The baker has trouble machining his dough, just as a production man does in a metalworking plant. To keep dough from sticking to the machinery, he has tried dusting it with flour and using drying agents and techniques. Now Sche-Rose says that Magna-Zyme makes a drier dough and eliminates the sticking trouble.

• Bakers sometimes add foods to speed the growth of yeast during fermentation. Magna-Zyme contains mineral salts that perform this function.

• Fungal enzymes will save bakers money. Mixes to the trade are a tight secret, but on the average each 100 lb. of flour is supplemented by: $\frac{1}{4}$ lb. of yeast food (5¢); $\frac{1}{4}$ lb. of malt (7¢);

AN EXAMPLE OF A
Sealing shape



if it needs a special shape to seal, guide or protect,
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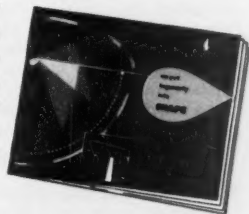
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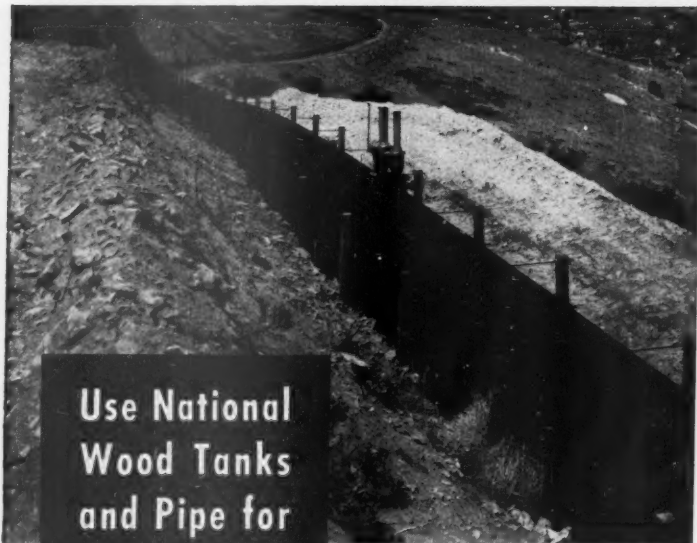


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$\frac{1}{4}$ lb. of softener (20¢). That adds up 32¢. But $\frac{1}{4}$ lb. of Magna-Zyme will do the same job for about 12¢.

Fungal enzymes have been used for a long time in some industries: confectionery, tanning, textiles, paper, and brewing.

• **More Tests**—How important this may be isn't certain yet. Although the Federal Security Agency may approve FDA's new bread standards, the latter is likely to reopen hearings on the entire subject. Tests made since the earlier alarm have indicated that the chemical additives may be less harmful than was first thought.

PRODUCTION BRIEFS

Ultrasonics to cure stream pollution is getting a tryout at Battelle Memorial Institute from a new angle. In the system Battelle is trying, the sound waves break up colonies of bacteria in the water into smaller colonies. The smaller groups multiply faster, eat more of the polluting waste. The cost of the equipment is still too high for industrial use.

A gas-turbine engine has been installed in the Shell Oil tanker Auris, the first installation of its kind in merchant marine service. After shakedown tests in England, the Auris will probably return to its scheduled run in the Caribbean.

Radio Receptor Co. has expanded output to include germanium diodes. The tiny, capsulelike devices are used to replace electronic tubes in radio and radar sets.

Producers of fats and oils who use monesters in their processes can now get them from Distillation Products Industries on a conversion basis. DPI will take acids that are supplied by the producers, convert them to monesters in tonnage lots in its high-vacuum stills.

Thompson Products moved into microwave radio by purchase of Antenna Research Laboratories, Columbus, Ohio. ARL will stress production of antennas for military planes. But Thompson sees consumer possibilities with smaller, more efficient antennas for black-and-white and color television.

A newsprint plant worth \$50-million is planned by Bowater Paper Corp., Ltd., of England at Charleston, Tenn., if it can get a certificate of necessity from National Production Authority. Capacity will be 125,000 tons of newsprint, 50,000 tons of pulp.

Glass Code	Type	Color	Principal Use	Thermal Expansion Coeff.—10 ⁻⁷ /°C	UPPER WORKING TEMPERATURES (Mechanical Considerations Only)				Thermal Shock Res. Plates 6"x6"			Thermal Stress Resistance °C	Viscosity D		
					Annealed		Tempered		Annealed				Strain Point °C	Annealing Point °C	
					Normal Service °C	Extreme Limit °C	Normal Service °C	Extreme Limit °C	1/8" Ths. °C	1/4" Ths. °C	1/2" Ths. °C				
0010	Potash Soda Lead	Clear	Lamp Tubing	91x10 ⁻⁷	110	380	—	—	65	50	35	19	397	428	6
0041	Potash Soda Lead	Clear	Thermometers	84x10 ⁻⁷	110	400	—	—	70	60	40	19	426	460	6
0080	Soda Lime	Clear	Lamp Bulbs	92x10 ⁻⁷	110	460	220	250	65	50	35	17	478	510	4
0120	Potash Soda Lead	Clear	Lamp Tubing	89x10 ⁻⁷	110	380	—	—	65	50	35	17	400	433	6
1770	Soda Lime	Clear	General	82x10 ⁻⁷	110	450	220	250	70	60	40	19	470	503	7
2405	Hard Red	Red	General	43x10 ⁻⁷	200	480	—	—	135	115	—	36	506	537	8
2475	Soft Red	Red	Neon Signs	91x10 ⁻⁷	110	440	—	—	—	—	—	17	466	501	6
3321	Hard Green Sealing . .	Green	Sealing	40x10 ⁻⁷	200	470	—	—	—	—	—	39	497	535	7
4407	Soft Green	Green	Signal Ware	90x10 ⁻⁷	—	—	—	—	—	—	—	17	485	518	6
6720	Opal	White Opaque	General	—	—	—	—	—	—	—	—	19	499	531	—
6750	Opal	White Opaque	General	—	—	—	—	—	—	—	—	8	445	475	—
6810	Opal	White Opaque	General	—	—	—	—	—	—	—	—	—	496	529	—
7050	Borosilicate	Clear	General	—	—	—	—	—	—	—	—	—	461	496	7
7052	Borosilicate	Clear	General	—	—	—	—	—	—	—	—	—	438	475	7
7070	Borosilicate	Clear	General	—	—	—	—	—	—	—	—	—	455	490	—
7340	Borosilicate	Clear	General	—	—	—	—	—	—	—	—	20	538	575	7
7720	Borosilicate	Clear	Electrical	—	—	—	—	—	130	90	—	45	484	518	7
7740	Borosilicate	Clear	General	—	—	—	—	—	180	150	100	48	515	555	8
7760	Borosilicate	Clear	Electrical	—	—	450	250	250	160	130	90	51	475	515	7
7900	96% Silica	Clear	High Temp.	10x10 ⁻⁷	800	1090	—	—	1250	1000	750	200	820	910	15
7900	96% Silica (Multiform)	White Opaque	High Temp.	8x10 ⁻⁷	800	1090	—	—	1250	1000	750	200	820	910	15
7910	96% Silica	Clear	Ultra Violet Transmission	8x10 ⁻⁷	800	1090	—	—	1250	1000	750	200	820	910	15
7911	96% Silica	Clear	Ultra Violet Transmission	8x10 ⁻⁷	800	1090	—	—	1250	1000	750	200	820	910	15
8870	High Lead	Clear	Sealing or Electrical	91x10 ⁻⁷	110	380	180	180	65	50	35	22	398	429	5
9700	—	Clear	Ultra Violet Transmission	37x10 ⁻⁷	220	500	—	—	150	120	80	42	517	558	8
9741	—	Clear	Ultra Violet Transmission	39x10 ⁻⁷	200	390	—	—	150	120	80	40	407	442	7

HAVE YOU OVERLOOKED
SOME OF THE
PROPERTIES OF GLASS?

**HAVE YOU OVERLOOKED
SOME OF THE
PROPERTIES OF GLASS?**



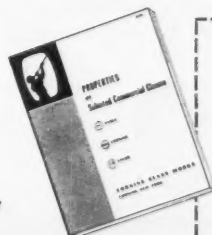
Glass is such a commonplace material, it's easy to overlook the many properties it can be made to possess—properties which may well prove the answer to your material problem. The above table suggests the wide variations in glasses available at Corning for various applications. You'll find Corning has hundreds of glasses with other important characteristics you may need—unusual corrosion resistance, high physical and thermal shock resistance,

optical clarity, and controlled light transmission, to name a few.

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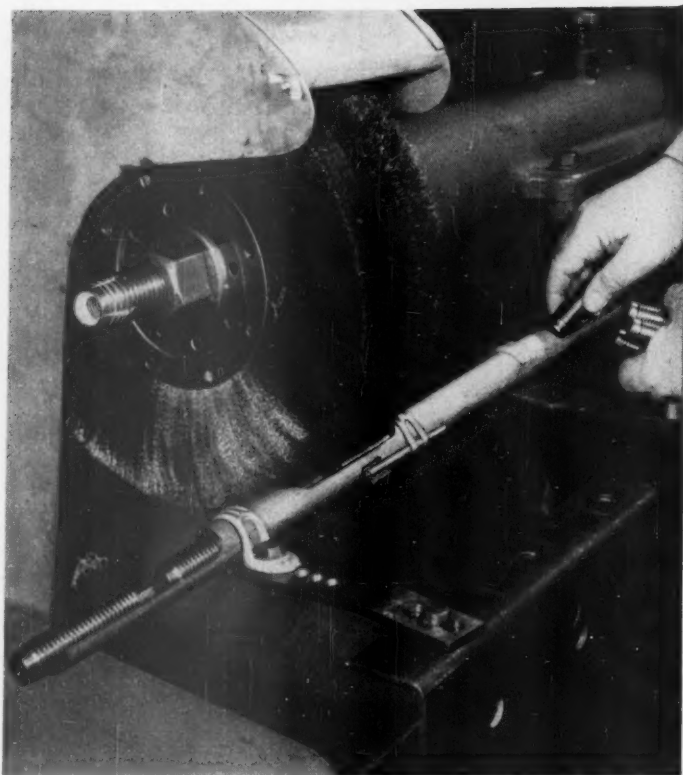


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How to find an 800% production increase in a piece of pipe

You can save manpower and money in countless ways when you tap the idea resources of power brushing. For example:

It took 18 seconds to clean the threads of the $2\frac{1}{2} \times \frac{3}{4}$ -inch set screws shown above. Time was cut to 2 seconds with Osborn Power Brushing by dividing the simple pipe fixture shown. The operator feeds the screws in one end of the pipe and an Osborn brush makes contact with the work at a slot cut in the pipe, spinning and cleaning the threads uniformly. A little stationary wire brush, inserted as shown through the pipe, controls rotation and traverse of the work.

Have your **Osborn Brushing Analyst** help you develop and apply output-increasing ideas to your cleaning and finishing operations. Call now or write *The Osborn Manufacturing Company, Dept. 537, 5401 Hamilton Avenue, Cleveland 14, Ohio.*



LOOK FOR THE NAME OSBORN . . . RECOGNIZED EVERYWHERE FOR
QUALITY WORKMANSHIP AND MATERIALS

NEW PRODUCTS



Automatic Bow Maker

Christmas is not far away. And Burlington Mills says that retailers may save a lot of money in Christmas wrapping this season if they use Burlington's new gadget called the Tymatic Bow Spinner. It makes decorative ribbon bows and pom-poms automatically.

All you have to do is attach the ribbon to the spinner, push the button, and tie up the finished bow. Burlington says that in 15 minutes you can teach an inexperienced girl to turn out 150-180 bows an hour on the machine. The company also claims that even the most experienced bow maker can produce only 12-15 bows an hour by hand.

Tymatic will make bows using one or two ribbons at the same time, and almost any fabric, paper, or plastic ribbons will fit the machine. It spins 9, 18, or 27 petals automatically, in various diameters.

The machine will be leased rather than sold to department and chain stores and to manufacturers. If you get your Tymatic Bow Spinner early enough, you can make two-color pom-poms for the football games, Burlington suggests.

• Source: Burlington Mills, 350 Fifth Ave., N. Y. C.

• Price: Leased for \$200 per year.

Prevents Engine Damage

An alarm device for diesel engines protects you automatically against crankcase explosions and other failures. The device is called the P-M Engine Protector—it works on a diaphragm principle.

When pressure is present in the crankcase, the diaphragm sets off an electric circuit that shuts down the

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—no greater precaution against excessive
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the new economic gateway to Asia...



Orders for Bonds may be placed at, and Prospectuses obtained from:
American Financial and Development Corp. for Israel

STATE OF **ISRAEL**
BONDS

modern Israel

For generations, American businessmen have deplored the lost business opportunities in Asia. They know that the goatherder, living in poverty on some Asiatic desert exactly like his forbears, can consume nothing produced by modern technology. They know that he and his kind, by the hundreds of millions, do not represent "markets", even though they occupy enormous areas of the earth.

But today the problem is more acute because, the new production tempo of the civilized world, and particularly the United States, calls for the distribution of consumer goods on a global basis.

That is why American business men are deeply interested in the new democratic State of Israel and in its \$500,000,000 Independence Bond Issue.

That is why such American companies as General Shoe, Philco, General Tire, Kaiser-Frazer, and others, have already established themselves in Israel.

For this Bond Issue symbolizes the emergence of a dynamic new country—a free society which, in a few short years, has achieved the highest living standards in all of Asia... a country destined to influence beneficially the living standards of all Asia.

Already, the people of adjacent countries, living for thousands of years on primitive standards, have felt the impact of Israel's modern technology. They have learned of Israel's new roads, its modern homes and cities, its new farmlands wrung from the desert and all the myriad business activities of its modern civilization.

The people of the State of Israel are consumers of American production because their standards call for such consumption.

On their new highways they need automobiles. In their new houses they need refrigerators and freezers. On their farms they require modern tractors and harvesters.

The new Bond Issue will help finance the growth of what is, per capita, one of the fastest growing countries in the world. It will serve to bring within the borders of this historic land many thousands of immigrants—who will, in turn, become hard-working citizens of a new democracy, and consumers of the products of the modern world.

American business is fully aware of Israel's strategic place in this crucial Age of Distribution. Certainly it will want to further the growth of this New Democracy. Surely, it will want to help Israel achieve its bright destiny in the brotherhood of the Free World.

Further information, particularly financial information, is contained in the Registration Statement filed with the Commission and in a more complete Prospectus which must be furnished to each purchaser and is obtainable from the undersigned.



120 BROADWAY, NEW YORK, N.Y.

STATE OF ISRAEL \$500,000,000 INDEPENDENCE BOND ISSUE

Two types of Bonds are offered at par as follows:

(a) Interest Bearing Bonds Denominated as Fifteen Year 3½% Dollar Coupon Bonds. Interest payable May 1 and Nov. 1

Denominations: \$500 • \$1,000 • \$2,500 • \$5,000
\$10,000 • \$100,000

(b) Capital Appreciation Bonds Denominated as Twelve Year Dollar Savings Bonds, Maturity Value: 150% of issue amount

Denominations: \$50 • \$100 • \$250 • \$500 • \$1,000
\$2,500 • \$5,000 • \$10,000

The State of Israel \$500,000,000 Bond Issue is intended to promote the economic development of the State. The proceeds of the Bond Issue are to be used for the purchase of machinery, raw materials, equipment and other items designed to increase the country's productive facilities so that it may earn and save foreign currency. Of the total amount, \$205,000,000 is to be allocated for investment in the fields of industry and power. The sum of \$130,000,000 has been designated for agricultural projects; \$40,000,000 for the development of harbors, shipping and railroads; \$45,000,000 for trade and services including the development of the tourist industry; and \$30,000,000 for the establishment of a government mortgage bank for housing.

The balance, after payment of the expenses of the issue, is to serve as a reserve for unanticipated projects or for increased expenditures for the designated projects.

The Government's economic development program involves a total project expenditure of \$1,500,000,000, of which \$500,000,000 is to be provided by Israel and other countries, and the balance is to be obtained in the United States. The \$500,000,000 State of Israel Bond Issue is the largest single source of funds for this program.

With immigration proceeding at the rate of 200,000 a year, Israel requires capital imports to meet the large investment necessary to create permanent employment opportunities and housing for the newcomers. A balanced and mature economy will as a rule produce enough to cover the consumptive needs of its population and to provide for some further investment to increase productivity. But under the best conditions, current production cannot begin to supply the huge capital needs of a population that is increasing at the enormous rate experienced by Israel. Palestine and Israel, therefore, have always had an adverse trade balance—like many young countries facing immigration and development tasks, including the United States, Australia and New Zealand. As immigration increased, so did the adverse trade balance. The import surplus served to meet the investment needs of the economy. For 1949 receipts on current account were (expressed in Israel Pounds, I.L.) I.L. 20,600,000 and payments, I.L. 94,100,000. For 1950 receipts on current account were I.L. 23,800,000 and payments, I.L. 113,400,000.

It is one of the major purposes of the Bond Issue to improve Israel's balance of trade through the establishment of new industrial and agricultural enterprises and through the expansion of production for export as well as for home consumption.

As of December 31, 1950, the funded debt was I.L. 114,200,000 and the floating debt, I.L. 1,300,000. The figures do not include any Treasury Bills, because of their relationship to the Special Defense Budget which has not been disclosed for security reasons.

Israel has never at any time defaulted upon the payment of principal or interest on any debt.

The budgets of the Government reflect the objectives of the State of Israel to provide for the immigration and absorption of a large number of Jews. From May 15, 1948 to March 31, 1949, receipts were I.L. 28,885,000 and expenditures, I.L. 27,529,000. From April 1, 1949 to March 31, 1950, receipts were I.L. 92,876,000 and expenditures I.L. 93,800,000. From April 1, 1950 to January 31, 1951, receipts were I.L. 113,473,000 and expenditures I.L. 112,087,000. These figures do not include Special Defense Budget expenditures or receipts from internal loans financing same.

The American Financial and Development Corporation for Israel with headquarters at 120 Broadway, New York 5, New York, is the principal underwriter for the State of Israel Bond Issue. The commissions or discounts are not to exceed 3½%.



basic ingredient of water-tight concrete

CONCRETE THAT CONTAINS a controlled amount of air is about 300% more resistant to the passage of water. It is also easier to work, has better surface texture, is more durable when exposed to frost action.

The Dewey and Almy product which controls the amount of air in concrete is Darex AEA, one of a group of related products developed in our laboratories for the concrete industry. Today, Darex AEA is being used on all types of concrete construction . . . is considered by many concrete technologists as one of the most revolutionary advances in the history of portland cement concrete.

Whenever you have a voice in specifications for buildings, highways, dams or other concrete construction, suggest concrete that contains Darex AEA: another example of the many Dewey and Almy *Chemical, Rubber, Plastic Products Keyed To Basic Human Needs.*



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engine. At the same time a little alarm bell rings.

Paxton-Mitchell Co., manufacturer of the device, says that this automatic engine shutdown will save money and time, prevent serious damage to the engine. The pressure in the crankcase is usually caused by broken liners, broken pistons, or broken rings.

The unit is designed to be used on all types of diesel engines.

• Source: Paxton-Mitchell Co., Omaha, Neb.

• Price: \$132.50.

Read It in the Dark

Manufacturers are still coming up with variations on the fluorescent color theme. Norco Products Mfg. Co., maker of blacklight and fluorescent lighting, has a new one, Blacklight Fluorescent Chalk.

Blacklight chalk when used in daylight looks like ordinary pastel-colored chalk, but use it with a blacklight fixture and it glows like neon. Norco suggests a wide variety of uses for the chalk. In classrooms, if you want to use the blackboard while showing slides or movies, you don't have to turn the lights on to do it. The chalk marks are easily visible in the dark.

And in a plant where light levels are low, signs and bulletins written with this chalk and illuminated with blacklight will catch the eye. Norco says the Air Force uses it in briefing rooms and in open areas because the blacklight can't be seen from the air.

• Source: Norco Products Mfg. Co., 392 Bleeker St., N. Y. C.

• Price: \$10 for a set of six colored sticks.

NEW PRODUCTS BRIEFS

Greater safety for linemen and maintenance men who work around electric lines in bad weather is offered by South-Eastern Cordage, N. B. C. Bldg., Cleveland. Its SE-LECTRIC rope is nonconductive and supposed to be highly water-resistant. The company claims it takes 15 times more voltage to force the same amount of current through a wet length of SE-LECTRIC as through a wet piece of ordinary manila.

The magnetic proximity switch made by Jo-Belle Products, Inc., 4840 So. St. Louis Ave., Chicago, has a number of new applications. You can use it to control pressure in air or hydraulic presses. It will actuate counting devices and can be installed as an automatic shut-off in certain high-speed punch presses.

The EZY Earth Anchor will hold guy lines, make dead-man installations, and

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Self-Dumping
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Fitting any standard fork or platform lift truck, thousands of ROURA HOPPERS are in constant operation handling wet or dry, hot or cold, bulky materials. Simple to operate — only one man is required for distributing and unloading, quicker and easier.

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provide piling and piercing for certain kinds of construction work. The anchor has a wide-flange screw that pulls into the earth as you turn the head. EZY is made by Van Dyke Industries, 3625 Cahuenga Blvd., Los Angeles.

A phosphatizing compound coating called Rustshield 2 makes steel and iron rust-resistant and makes an ideal base for lubricating oils, says Octagon Process, Inc., Staten Island, N. Y. It is used on rubbing and sliding surfaces, such as pistons, thrust washers, gears.

The first six-color pencil made says Sparkes Products, Newark, N. J., is Sparkes "66." The pencil has visible lead chambers and a built-in lead shock-absorber to prevent lead breakage.

A substitute for chamois, Mirasham, is a nonwoven, lintfree fabric treated with latex. It's not supposed to be affected by detergents, gasoline, waxes, and cleaning compounds. The important feature says Betterby, Inc., 230 Fifth Ave., N. Y. C., is that it outlasts three ordinary chamois wipers and costs one-third as much.

More power is the feature of a pocket-size stapler made by Heller Co., 2151 Superior Ave., Cleveland. The heavy-duty stapler uses oversize staples, fastens metal or fiber shipping tags to export boxes.



It'll Go to Kids' Heads

If your wife's hats bother you, wait till the small fry turn up with Loony Lids. The Lid is made out of Vinylite Plastic, a product of Bakelite Division of Union Carbide & Carbon Corp. The hats come from Ideal Toy Corp., of New York.



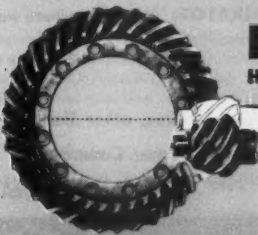
Go Hypoid!

—ON **TIMKEN-DETROIT**
MEDIUM- AND HEAVY-DUTY AXLES

Time is a mighty important thing to the average American. His everyday living and working habits keep America's big motor truck fleets running on strict schedules—moving goods for farm, industry and home! And—thanks to Timken-Detroit Axles with Hypoid Gearing—successful fleet operators are continually stepping up schedule speeds—increasing ton-miles and profits!

The simple, rugged construction of Hypoid Gearing keeps maintenance expense at a minimum—provides plenty of strength and power for long hauls! This heavy-duty axle gearing has been *proved* by billions of miles of trouble-free operation under all types of load and road conditions!

If you're in the market for new trucks, specify Timken-Detroit Axles and Brakes! You'll find Hypoid Gearing an important feature!



HYPOID HEAVY-DUTY GEARING

The offset Hypoid pinion is bigger and stronger. Bearings are bigger. More teeth are in contact, reducing loading per unit of contact area. Torque-transmitting capacity is increased. Slower gear ratios are practical without loss of strength.



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YOURS FOR THE
ASKING!

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WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSES AND TRAILERS
PLANTS AT: Detroit and Jackson, Mich. • Oshkosh, Wis. • Union, N. Y.
Ashtabula, Kenton and Newark, Ohio • New Castle, Pa.

PRODUCTION IMPROVED at International Harvester with Sheffield Precisionaires

The following are actual on-the-job comments from the Fort Wayne Plant, Motor Truck Division of International Harvester where Sheffield Precisionaire gages are on the job.



SUBJECT: Differential carrier reaming operation.

Does air gage and quality control chart help?

FOREMAN: "They enable us to know where we are. Quality is improved, resulting in better pinion cage assembly fit."

OPERATOR: "It's the best thing we ever had. We can see gradual size change and be on guard to know when to change reamers. I have no worry about scrap or rework."



SUBJECT: Ring gear boring operation.

Has air gage and quality control chart been helpful?

FOREMAN: "Scrap was reduced from 3% to practically nothing. Improved method of setting boring tool and redesigned facing tool were developed. Air gage check is much faster than old method."

OPERATOR: "We know where we are all the time."

For more information about Precisionaires, other Sheffield products and services write to "Customer Consultation."

5834

the *Sheffield* corporation

Dayton 1, Ohio, U. S. A.

GAGES • MEASURING INSTRUMENTS • MACHINE TOOLS
CONTRACT SERVICES • THREADING TOOLS



RESOURCES

'Quoddy Reborn?

Depth sounding with new Navy equipment offers hope for Down East tidal power project.

A two-week job of depth sounding with Navy sonic apparatus is reviving the battered Passamaquoddy (Me.) tidal power project. U.S. Geological Survey is now busy interpreting results of the soundings. Its report may be a pleasant surprise for the Army Engineers and other backers.

Geological Survey was planning to test Navy depth-sounding equipment, made by Edo Corp. of College Point, L. I., along the Continental Shelf. An Army engineer happened to hear about the test and suggested making it at Passamaquoddy, to kill two birds. USGS agreed.

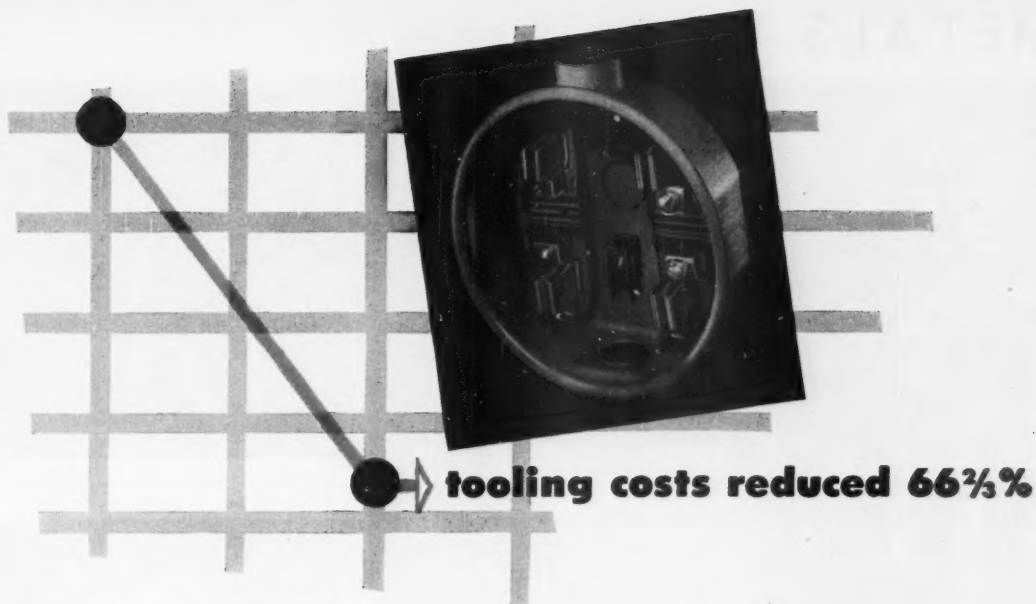
• **Good Base**—In speed, cost, and results, the USGS survey differed sharply from the core borings made by Army Engineers in 1935-36. When the project was then being pushed as depression relief, it cost the Army nearly \$700,000 for a limited amount of drilling. At that rate, it would have cost a couple of million dollars, and taken at least six months, to obtain the data that USGS collected last summer with 10 men in two weeks.

Findings with the new equipment confirmed the test cores taken in 1935-36: There is indeed a heavy layer of mud over the bedrock where some structures would be built. But the two-week exploration also showed sound bedrock and little mud at the critical sites of dams, not tested in 1935-36.

• **Echoes From the Deep**—The Navy depth-finder operates on the sonar (echo) principle. A transducer, comparable to a radio transmitter, sends a signal down through the water. The returning echoes are translated into electrical impulses, which write their story on a continuous sheet of graph paper.

Unlike the older fathometer, the Navy-Edo equipment does more than just show how deep the water is. It records how deep, how thick each layer of ocean bottom is, right down to solid rock. It's sensitive enough even to register schools of fish and patches of seaweed, but a skilled interpreter can winnow out these factors.

At Passamaquoddy, the ship cruised over an area larger than the 15 sq. mi. suggested in the original revival of the project (BW—Jan. 14 '50, p. 21).



Let Mr. Ray Blakeman, president of Blakeman Bros. Electric Mfg. Co., Los Angeles, tell you this story of savings with Plaskon Alkyd Molding Compound in the manufacture of his company's commercial and residential watt-hour meter-mounting devices. Mr. Blakeman writes: "Tooling cost is about one-third using this material as compared to the tooling cost of other plastic materials"... "We have found that Plaskon Alkyd lends itself very well to automatic molding, giving us a high production rate on automatic presses"... "Percentage of reworks and breakages is extremely low"... "Our particular device requires a high dielectric strength for which Plaskon Alkyd is noted"... "Since using Alkyd we have not had one operating failure... of our product."

Here is more evidence that parts can be molded better and faster at lower cost—with the amazing quick-curing plastic which has created new concepts of speed and economy in compression molding.



It may pay you well to check the possibilities of Plaskon Alkyd in relation to your product. We will be glad to send you a complete set of the latest bulletins describing the many unusual properties of this unusual thermosetting plastic molding compound.

mold it better and faster with

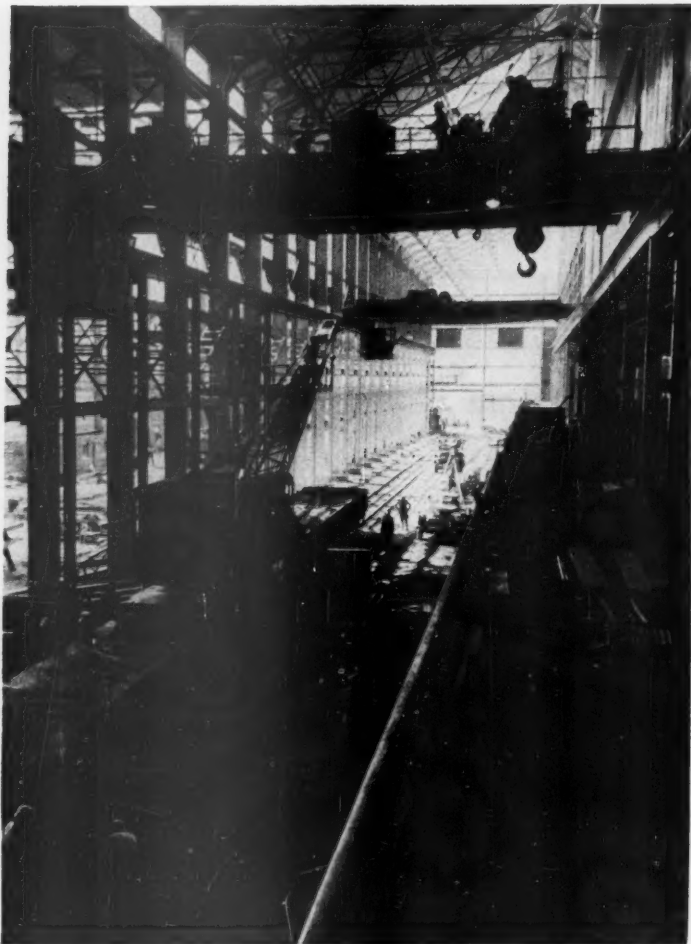
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METALS



1 Construction and production are simultaneous at Electromet's new furnace shop in Marietta, Ohio. Plant will be one of world's biggest ferroalloy producers for steel.



2 Materials move by rail to mix-house serving three six-furnace smelting shops.



5 Five more tons of 50% ferrosilicon. Furnace man (right) skims impurities from metal as



A DOZEN CONTRACTORS dig in at Electromet's \$100-million plant.

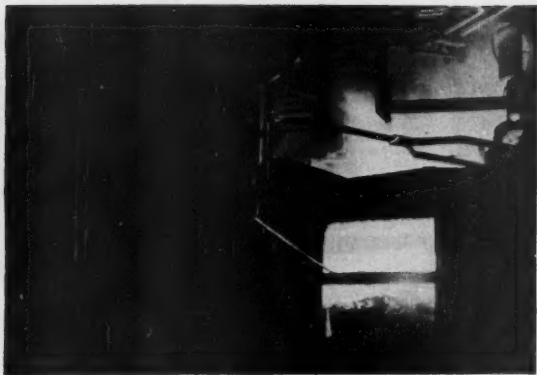
More Plant for

At an unfinished plant at Marietta, Ohio, finished products are moving out in the same freight cars that bring in building materials. That's how hungry the steel industry is for ferroalloys—such things as ferrosilicon, ferromanganese, silico-manganese, and low-carbon ferrochrome. The new plant will increase the capacity of Union Carbide & Carbon Corp.'s Electro Metallurgical Division.

Steelmakers use the stuff to get the scum out of their product and to get



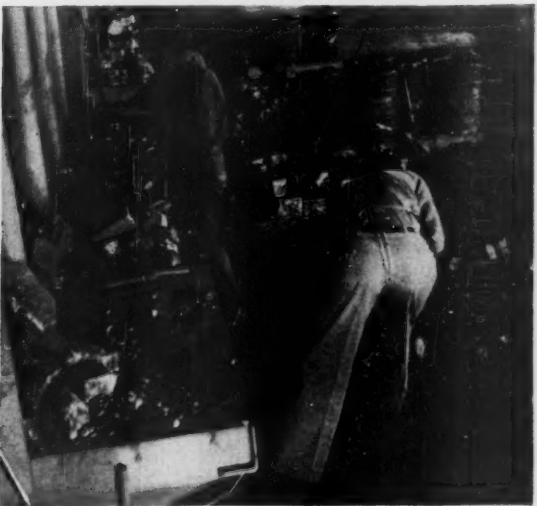
3 Mixtures of coke, ores, and fluxing agents are conveyed to furnaces on trestle. Ore is stocked below.



4 Furnace man stokes submerged-arc, 12,000-kw. electric furnace smelting standard 50% ferrosilicon.



it flows into "chills" for cooling. Next step will be to crush it into 75-lb. lumps.



6 Cleaning and sizing is done at work tables. When plant is completed, alloys will be in cars loaded by conveyor belts.

More Alloys for More Steel

special qualities into it—heat or corrosion resistance, high strength, workability. You can't make a ton of steel without using ferromanganese and ferrosilicon as refining agents. You make no stainless without ferrochrome. With its ingot capacity going up to 177.5-million tons yearly, the steel industry needs Marietta the way fleas need a dog.

• **Gamble**—The odds have been up and down ever since, five years ago, Electromet decided to gamble \$100-million

on the ferroalloy plant at Marietta. The postwar boom made it look like a smart move, but the 30% slump in alloy steel production in 1949 cast a cloud. Re-armament, Korea, and the NATO pact took Electromet off the hook. Now there's a question whether the new capacity will be enough, even though it's one of the world's biggest ferroalloy plants.

Actual production has now begun at Marietta, although the plant won't be completed for two years. This week

Electromet is putting its second electric furnace into operation. When the plant is completed, 26 electric furnaces will be operating.

I. Steel Sets the Pace

Demand for alloy steel always moves up and down with steel production—but always a little faster. When steel slumps, alloys are the first and hardest hit, but in a boom or an arms race they spurt immediately. So volatile is

3 BIG JOBS

handled by

1 LORAIN CRANE

PRODUCTION... Lorain Cranes can increase production with their ability to handle more materials faster . . . will handle any size, shape or type of material . . . in any part of your yard . . . will save hours and manpower on all material handling jobs.

MAINTENANCE... Lorain Cranes fit many routine and other maintenance jobs all over the plant; such as handling condensers, stills, tanks, transformers, moving heavy machinery, maintaining yard areas. Lorain Crane mobility means you can move anywhere on a moments call.

CONSTRUCTION... Lorain Cranes add another bonus on erection or construction work. The same Lorain that speeds production and maintenance is always ready for steel erection, digging foundations, setting smokestacks. Uses are unlimited, and on every use there's a saving.

PITTSBURGH COKE & CHEMICAL CO.

use a rubber-tire 20-ton Lorain Self-Propelled Crane on material handling jobs at their Pittsburgh, Penna. plant. Here, a model SP-414 with 70 ft. boom is handling parts. They use 2 Lorains.

TYPES FOR EVERY INDUSTRIAL JOB

- CRAWLER CRANES, 6 to 36-tons lifting capacity.
- SINGLE-ENGINE rubber-tire cranes (7 m.p.h.) 10, 15, 20-tons lifting capacity.
- TWO-ENGINE Moto-Cranes (30 m.p.h.) 10, 15, 20, 25, 35, 45-tons lifting capacity.
- 16 ATTACHMENTS for handling any size, shape or type material.

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THE THEW SHOVEL CO.
Lorain, Ohio

THE NEW LORAIN

WORLD'S LARGEST BUILDERS OF COMMERCIAL SIZE CRANES AND SHOVELS

"... alloys are the first and hardest hit . . ."

ALLOYS starts on p. 66

the market that one day you're dealing with a surplus, the next you're buying what you can anywhere you can get it. One month there's no market for tungsten; the next finds you opening a very expensive mine to work low-grade ores in an impossible location 9,300 ft. up a mountain.

• **One Up on Steel**—For all of steel's expansion, Electromet has been adding capacity at a faster clip. When steel ends its current expansion program in 1952, it will have increased ingot-ton capacity by about 45% over the 81.6-million tons in place in 1940. In 1953 Electromet will have three times the capacity it had in 1940.

The difference isn't just for good measure. Last year alloy steel tonnage was 75% greater than it was in 1940, totaled 8.8% of all steel output. In 1940 it totaled 7.4%. During the war, of course, alloy tonnage broke all records at 2.6 times the amount produced in 1940, 15% of all steel produced. Steel ingots and castings take 83% of Electromet's production. So Electromet figures to have capacity for any demand its principal customer may make, whether it arises in peace or war, from more gross tonnage or proportionately more alloy tonnage.

Put another way, Electromet figures on having 4.1 kilowatts of power capacity in place and connected to its furnaces for every thousand tons of steel capacity in operating condition. The figure has been rising steadily. There's even speculation that it may go as high as 4.7 kw. per thousand tons of steel capacity under the impact of predictable demands for alloyed and stainless steel. (Electromet uses this method of rating its plant since ferroalloy tonnages vary widely among producers.)

• **Improvements**—The Marietta plant will be almost identical in capacity with Electromet's works at Alloy, W. Va.—now the world's largest. But the resemblance ends there. At Alloy, Electromet turns out not only the big tonnage items such as chrome, silicon, and manganese, but also alloys of the rare metals—such as molybdenum, tungsten, vanadium, zirconium, and columbium.

Marietta will produce the big tonnage items only. And Marietta will have two entirely new processes in operation: One will make low-carbon ferrochrome to startlingly tight specifications; the other process will produce electrolytic chrome.

There are other differences between Alloy and Marietta. It's not that Alloy is an old plant (production started

Rough Spot Remover.....



SHOCK ABSORBERS OF SHARON* STEEL
IRON OUT BATTLEFIELDS FOR AMBULANCES

The steel used in this shock absorber is nothing extraordinary. It is a plain carbon steel delivered in strip form to facilitate faster production methods.

What makes this steel important is the product. The armed services need ambulances that can travel

the rough battlefield terrains smoothly and without mechanical failure. The heavy duty shock absorber has proved to be the best answer. To manufacture the product in the amounts needed requires great tonnages of strip steel, much of which is being supplied by Sharon Steel Corporation.

* Specialists in STAINLESS, ALLOY, COLD ROLLED and COATED Strip Steels.

SHARONSTEEL

SHARON STEEL CORPORATION

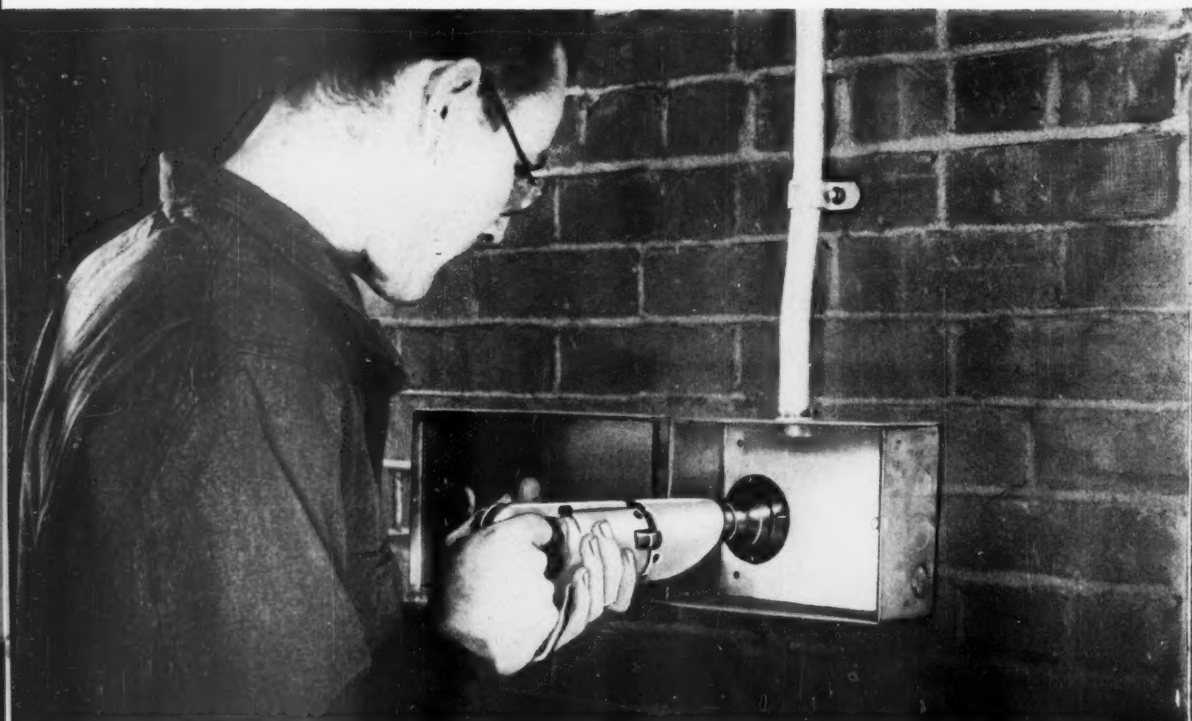
Sharon, Pennsylvania

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For information on Titanium Developments contact Mallory-Sharon Titanium Corp., Indianapolis 6

Announcing **REMINGTON**

New cartridge-powered tool concrete or steel in one



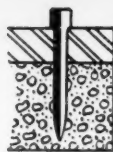
*It's
fast and easy
to operate
The Remington
Stud Driver*



Simply hand-assemble stud and power cartridge, load as a unit in easy-to-open Remington Stud Driver, and close.



Then press loaded Stud Driver firmly against working surface, depress safety button, and pull trigger.



Explosive charge imbeds stud solidly. Open Stud Driver with a twist of the wrist, eject empty shell, load next stud. Whole job takes seconds!

"If It's Remington, It's Right!"

Remington



MODEL 450

STUD DRIVER

fastens steel or wood to *lightning-fast* operation

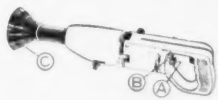
LOOK AT ALL THESE FEATURES

COMPACT AND PORTABLE. Weighs only 5½ pounds, ideal for scaffold, ladder and overhead work. Comfortable to use in any position, perfect for inaccessible places.

SPEED. One man can set up to 5 studs in a minute. Entire mechanism designed for speed, from loading to pulling the trigger to ejection of shell. Stud is set at whatever depth is required—up to 2¾ inches, depending on material.

ELIMINATES INVESTMENT IN OUTSIDE POWER. Operator has all the equipment needed right in his hand. Excellent for use in isolated areas.

TRIPLE SAFE. Remington Stud Driver has plainly visible red dot indicator (A) to show when it's cocked, safety (B) that must be depressed before and during squeezing of main trigger, and permanently attached safety shield (C) that must be compressed against work before the Stud Driver will operate. Trigger is well protected, cannot be tripped accidentally. Has only slight recoil and low noise level.



WIDE VARIETY OF STUDS are available for every fastening job—every stud trade-marked for the user's protection. Pull-out resistance as high as two tons in good concrete, depending on the stud used. Cartridges are available in 5 different power loads, covering all possible fastening requirements—any stud instantly assembled with any cartridge.

RUGGED. All working parts of the Stud Driver are made of heat-treated alloy steels, housing of strong, lightweight aluminum that carries no operating stress. Lining of safety shield is a solid block of tough, resilient Du Pont neoprene.

PRICE for Model 450 Remington Stud Driver—only \$119.50—complete in rugged steel carrying case. Initial production and distribution may not keep pace with demand, but every effort will be made to fill orders as promptly as possible.

Sets fastening studs as fast
as 5 per minute...needs no
outside power source

Here's a tool that can truly revolutionize your construction fastening methods—speed jobs and cut costs. In a matter of seconds, the Remington Stud Driver firmly fastens steel or wood structural pieces and fittings to concrete or steel surfaces. It's as much as 100 times faster than methods now widely used. And this simple tool does the entire job...requires no outside power source or equipment. It's compact, portable, rugged...and safe.

Proved by exhaustive tests to be the finest fastening system ever devised, the Remington Stud Driver is made by Remington Arms Company, Inc., America's oldest and foremost gun-makers. To obtain detailed information on this time- and money-saving tool, and for the name of your nearest distributor, fill out and mail the coupon below.

Remington Arms Company, Inc.
Industrial Tool Division
930 Barnum Ave., Bridgeport 2, Conn.

I am interested in obtaining detailed information on the Remington Stud Driver Model 450.

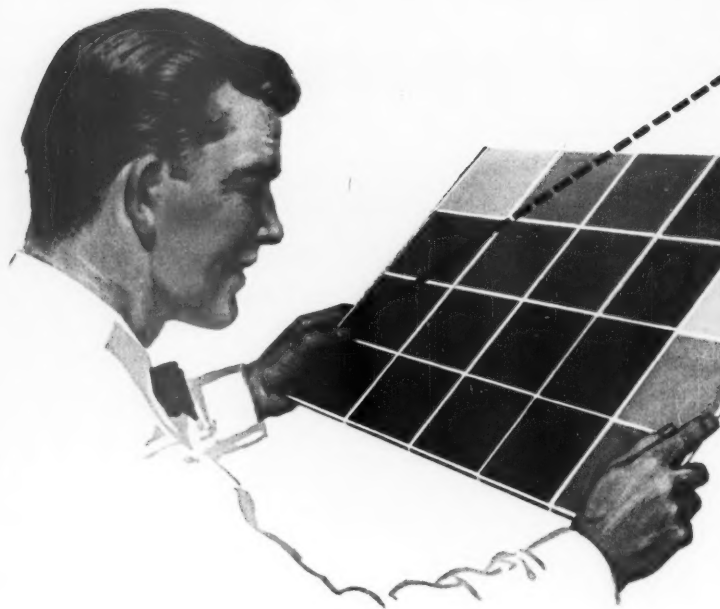
Name _____
Firm _____
Position _____
Address _____
City _____ State _____

ALL THESE JOBS... AND MANY MORE!

1. Hanging steel sash and door bucks to concrete and brick.
2. Anchoring wood plates to concrete floors and ceilings for setting partitions.
3. Fastening wood furring strips to concrete for attachment of metal lath.
4. Anchoring suspended ceilings, hangers, sprinkler systems and lighting fixtures to concrete.

5. Attaching conduit and panel boxes to steel and masonry.
6. Anchoring light machinery to concrete pads.
7. Erection of signs, awnings and blinds on steel or masonry.
8. Hanging radiator housings to concrete or brick.
9. Fastening soil pipe hangers to concrete.
10. Fastening 2 x 4's to steel structurals.

what color will RED be?



How Naugatuck Marvinol Laboratories can help you with color problems in VINYLs

In compounding or processing do you maintain your vinyl colors just as you want them? Do color-matched products really match? Do they remain true as long as the product lives?

These are tough problems. But the Naugatuck Chemical Laboratories may have answers to help you solve many of them.

Thousands of man-hours and dollars are devoted each year to fundamental color technology. The results of this unusual storehouse of color "know-how" are here for application to your problems.

Hundreds of charts record the effect of stabilizers and lubricants on the heat and light stability of the important

colorants in vinyl compounds. Competent color technologists are ready to advise and help you.

Our Naugatuck laboratory is *your* laboratory with vast amounts of data on colorants, stabilizers, plasticizers, and plastic processing techniques. And our Naugatuck Marvinol resins have the *stability* your products need.

Yes, Naugatuck is a sound base for your plastics future—with the right combination of laboratory "know-how" plus the best resins or resin combinations for your future. Why not see how much our scientific service and our Marvinol resins can do for your products? Write us today on your company letterhead. Send inquiry to the address below.

Naugatuck Chemical

Division of UNITED STATES RUBBER COMPANY

510 ELM ST., NAUGATUCK, CONNECTICUT

BRANCHES: Akron • Boston • Charlotte • Chicago • Los Angeles • New York • Philadelphia • IN CANADA: Naugatuck Chemicals, Elmira, Ontario

MARVINOL® vinyl resins • KRALASTIC® styrene copolymers • VIBRIN® polyester resins

Rubber Chemicals
Aromatics
Synthetic Rubber
Agricultural Chemicals
Reclaimed Rubber
Latex



COAL AUGER, starting a new cut, recovers coal that strip mining couldn't get at.

there in 1934), it's just that Marietta is ultra modern. You'll see none of the smoke there that normally is found wherever metal is smelted. You'll find the latest materials-handling equipment—for ferroalloys is a bulk-transport business. You'll find one of the country's really low-cost industrial powerplants, and a coal mining operation that fuels it for 14¢ per million Btu.

II. Noncorrosion Factor

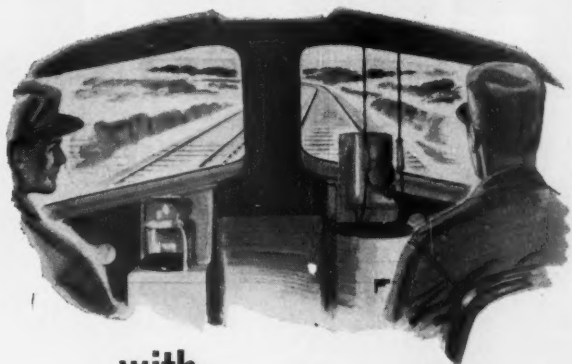
Probably the most significant thing that Marietta will add to the economy is its 60,000 tons of low-carbon ferrochrome per year. When you make a jet engine or a chemical plant, you have to have steel that will resist the most severe corrosive attack. That means stainless steel—and one of the finest grades. In the steel, carbon intensifies corrosion problems, so you have to get all the carbon you can out of the steel. And when you add the ferrochrome to build up the stainless quality, you don't want to add any carbon.

At Niagara Falls, N. Y., Electromet makes low-carbon ferrochrome to a 0.03% maximum carbon specification. It averages 0.025%. At Marietta, the Niagara Falls average will be the maximum. Some of the Marietta output will be as low as 0.008% carbon.

• **For Less Carbon**—These figures have a deep significance to manufacturers. They mean, for instance, that they'll be able to make more and better jet engines, even though there doesn't begin to be the columbium that ordinarily would be required.

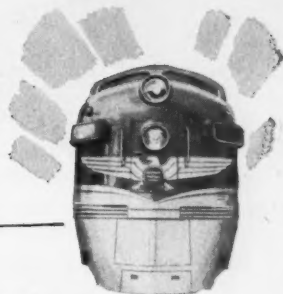
Columbium, when you have it, keeps the carbon from dispersing itself in the steel so as to invite corrosion. If you don't have the columbium, the only answer is to make sure there's no carbon in the steel. At Marietta,

Looking Ahead



with

MO-PAC



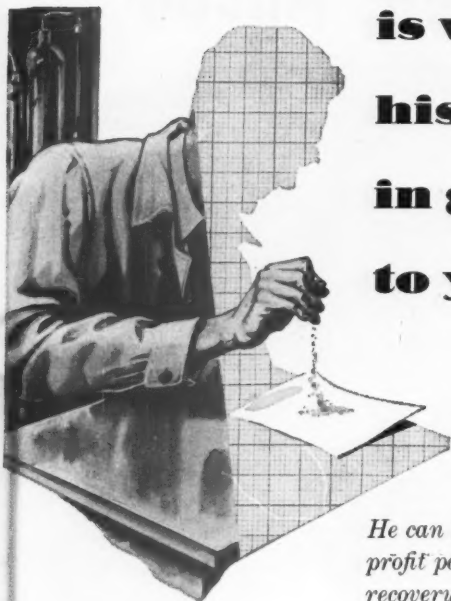
Looking ahead to its second century of service, MO-PAC continues to live up to its reputation as a "Modern-Progressive" railroad. For with the addition of 126 new units, early next year, MISSOURI PACIFIC Lines' fleet will consist of about 700 diesels.

This will mean better and faster service for shippers and passengers alike, for all main lines of MO-PAC's 10,000-mile system will be completely or partially dieselized and radio equipped . . . a record matched by few railroads in the entire nation.



A CENTURY OF SERVICE TO THE WEST-SOUTHWEST

This 'dust' man



**is worth
his weight
in gold—
to you**

*He can help you to new
profit possibilities in the
recovery of valuable
escaping dust*

There are still many men in industrial management who have yet to sit across the desk from an industrial dust engineer—a man who may be actually worth his weight in gold to you.

If you are one of these men, you have a revealing half-hour in store—a half-hour that can mean new profits...improved product and/or process...even a boost in employee morale.

The reason? Buell's staff of industrial 'dust' men draw on more than 200 man-years of experience in the design and construction of high-efficiency, trouble-free Dust Recovery Systems. You will learn of the success of hundreds of Buell Installations. You will learn how one can be designed for you.

For full information about Buell Dust Recovery and Dust Collection Systems, write today. Ask for the well illustrated Buell 'Dust Recovery' bulletin. It can be a highly profitable move. Buell Engineering Company, Dept. 30-J, 70 Pine Street, New York 5, N. Y.



HIGH EFFICIENCY CYCLONES • ELECTRIC PRECIPITATORS
TYPE 'LN' COLLECTORS • LOW DRAFT LOSS COLLECTORS
SPECIAL PURPOSE COLLECTORS • DUST HOPPER VALVES

buell

ENGINEERED EFFICIENCY IN DUST RECOVERY

**"... the industry is at the
mercy of general economic
conditions ..."**

ALLOYS starts on p. 66

Electromet will manufacture standard 5% carbon ferrochrome—as a feedstock for the low-carbon ferrochrome operation. Then it will reduce the 5 lb. of carbon per hundred to a third of an ounce.

• **New Format**—You would think that that type of refining would be possible only by microchemistry. Electromet will do it with an entirely new process about which the company is keeping mum. It will use an electric furnace with a power input up in the thousands of kilowatts, but the material will never melt. The product won't be cast, but rather will be pressed after removal from the furnace. It's an Electromet process, proved in a pilot plant at Niagara Falls.

III. What It Takes

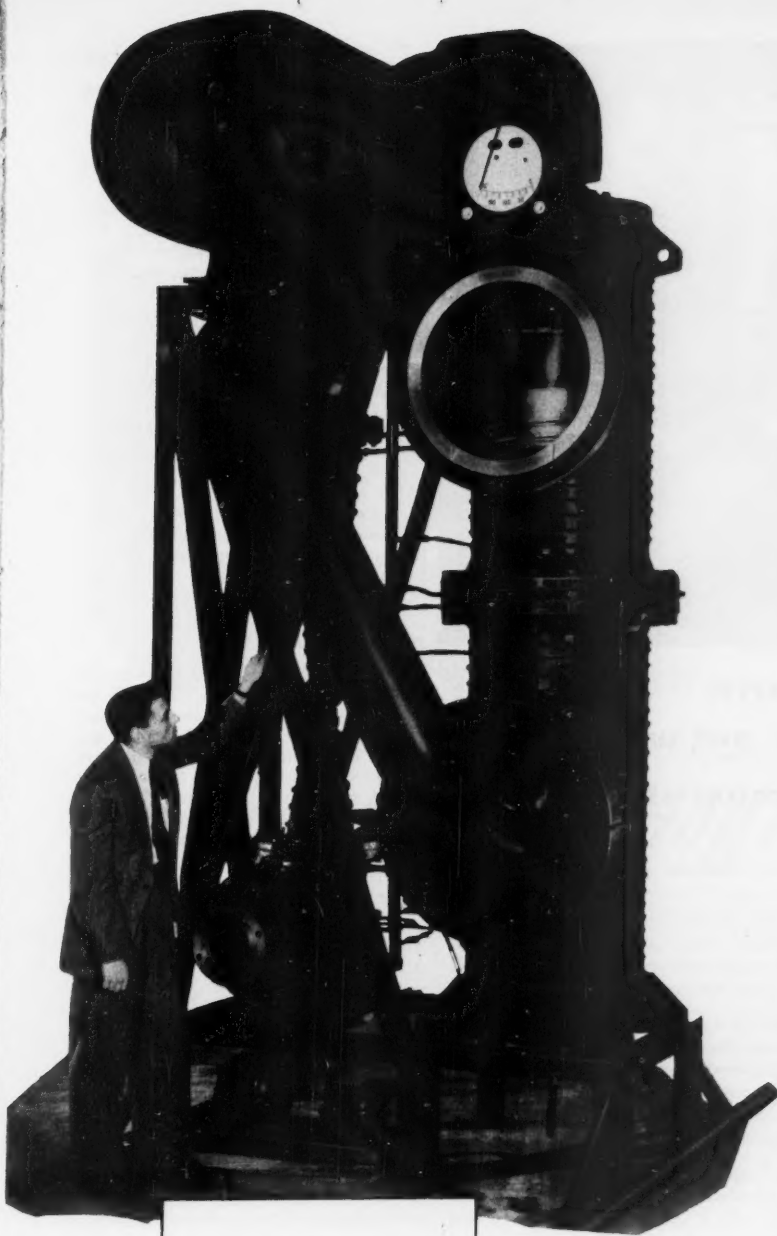
The ferroalloy business is built on fuel—with which this country is widely blessed—and nonferrous metals, on many of which we're in short stock. The materials and the product are massive. But to be usable, the product must be precise.

All this means that the ferroalloy business is one of heavy capital investment and one that demands highly skilled workers. Since ferroalloys aren't an end product, the industry is at the mercy not only of general economic conditions, but also those that affect iron, steel, and aluminum. You're in a technical service business in which you carry the inventory.

• **Electromet Makes Its Own**—Because power is one of your principal materials—it'll run from 0.5 to 6.5 kilowatt-hours per pound of product, 5,000 to 14,000 kw. per furnace—you either generate your own or risk a business slump in which heavy power demand charges continue, even though you're not operating. It's a business that traditionally sells on a delivered-price basis. That means that usually you have to locate your plants somewhere near the steel mills, yet not impossibly far from the seaports to which your ore is delivered from all over the world.

Electromet built its new plant on the Ohio River not because of the water transport possibilities, but because it afforded ample condensing water for the powerplant with cheap, easily mined coal about 25 miles away at Dexter City, Ohio.

The four-unit, 160,000-kw. plant that Electromet is completing at Marietta will generate at 2.5 mills per kwh., not



DPI

we've built a GIANT

**...to produce high vacuum
in bigger chambers—at
less cost—than ever before**

SAY you're producing one of the modern metals that has wonderful properties but can't stand oxygen at high temperatures. Or maybe your problem is a large wind tunnel, a synchro-cyclotron, or a vacuum dehydration chamber for biologicals.

You want to push out into the atmosphere as much air or gas as possible at the lowest cost. You may need to exhaust down to 1/2000th of atmospheric pressure or as low as 1/75,000th of an atmosphere.

DPI now supplies a series of non-mechanical pumps which can operate in this pressure range at rates well over 10,000 cubic feet per minute, compressing air and gas to the point where mechanical pumping becomes highly efficient—to pressures as high as 10 mm Hg where needed.

If you will tell us your vacuum pumping requirements, we'll be glad to show you how these unique oil ejector pumps make possible a new order of operating economy for large high vacuum systems. Write *Distillation Products Industries*, Vacuum Equipment Department, 739 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

If you'd like to talk it over with DPI engineers, just drop in at Space D-236 at the National Metal Exposition, Michigan State Fair Grounds, Detroit, October 15 through 19.

Also ... vitamins A and E ... distilled monoglycerides ... more than 3400 Eastman Organic Chemicals for science and industry



● **SHOPSMITH** ● **stands out where** ● **tools must stand up!**

SHOPSMITH is a multi-purpose power tool. It saws, sands, drills and turns—does 116 operations. It also *stands up!* Pictured above is the second **SHOPSMITH** produced by the Magna Engineering Corporation—still going strong after four years of continuous service as a production drill press in Magna's own San Francisco factory.

SHOPSMITH is primarily a home-workshop tool. But it performs each of its operations so well that it's not unusual to find **SHOPSMITHS** being used on production lines for one purpose alone. A machine tool company has several set up as reamers. A producer of plastic products finds **SHOPSMITH** perfect for sanding transparent plastic novelties.

The basic five-tool unit (circular saw, disc sander, wood lathe, vertical and horizontal drill press) costs \$189.50 not including motor (\$34.50). It converts from tool to tool in less than a minute and takes only 2' x 5' of storage space. You can see **SHOPSMITH** demonstrated at leading hardware and department stores or any Montgomery Ward store. Or you can read about it in our 16-page **SHOPSMITH** catalog. We'll be glad to send you a copy. Simply write:



Magna Engineering Corp.

Dept. 189-H, Menlo Park, California

Manufacturers of **SHOPSMITH** • Plants in Berkeley and Cleveland

"... A company can run into competition from its customers ..."

ALLOYS starts on p. 66

including depreciation or capital costs. Electromet today uses 500,000 kw. 90% of the time—or about 3.9-billion kwh. per year. In two more years, the company will be using 790,000 kw., of which it will generate 540,000 kw.

• **Nearby Coal**—At Dexter City, Electromet mines 1,500 tons daily of coal rated at 11,500 Btu. per pound. Since it's used only for steam generation, the coal doesn't have to be washed. Practically all of it is strip-mined, but experiments with a coal auger show inexpensive recovery of coal that's overtopped by too much rock to be strip-mined economically. The auger simply drives a cutting head horizontally through a seam of any height, pulling along a worm feed that delivers the coal to a loader.

IV. Big Business

Although Electromet works with only 10 different nonferrous metals, it has at least 140 different standard product specifications. Just one of them—standard 50% ferrosilicon—has 68 different quoted prices, depending on size, quantity, method of shipment.

Then there's the competition. There are numerous other producers of ferroalloys, although none with so broad a line as Electromet's. For some uses, nickel alloys—which Electromet doesn't make—compete with ferromanganese, one of Electromet's biggest items. A company can even run into competition from its own customers: U. S. Steel and Bethlehem Steel both are big producers of ferromanganese, for their own account and for sale. Aluminum producers can and do make ferrosilicon.

• **Rewards**—Of course, the ferroalloy business has its rewards. Union Carbide & Carbon's alloy division did a \$197-million gross business last year, about 26% of Union Carbide's total. The prospects for this year are even bigger. Expansion has been continuous since 1946, will total \$135-million by the end of this year—probably \$80-million more when the program is completed. Even so, production won't balance steel's requirements until the third quarter of 1952, according to Electromet's president, Walter E. Remmers. He adds that the trend in steel is to more and more alloys per ton, even aside from armament. Alloy steels probably will total 10-million tons this year, not quite 10% of the total (BW—Aug. 11 '51, p. 56).



Better Keep Moving!

Motion is mighty important to survival. Especially in business. You must keep something moving from here to there . . . continuously, dependably, and economically.

That's why you find Rapistan conveying equipment and the "material flow" method in so many types of business . . . manufacturing, wholesaling or retailing. It's economical and it delivers dependable service day in and day out.

Better 3 Ways

Rapistan's outstanding reputation has been built upon consistent attention to three chief factors:

Rapistan Flexibility . . . a unit, line, or system

to fit *your* problem exactly. Rapistan units are adaptable to any floor or inter-floor plan, with re-routing as easy as moving furniture.

Rapistan Quality . . . exclusive "knitted frame" gravity conveyor design gives greater strength with less weight; one-piece steel "box channel" belt conveyor construction, no welds. Conveyor wheels have lifetime grease-packed lubrication; pulleys are machine welded.

Rapistan Value . . . original cost is low, equipment pays for itself. You'll experience substantial savings on space and manpower, and increased profits.

For all your conveyor needs it will pay you to check Rapistan. Write today for free conveying equipment handbook!

The RAPIDS-STANDARD COMPANY, Inc.
412 Rapistan Bldg. Grand Rapids, Mich.

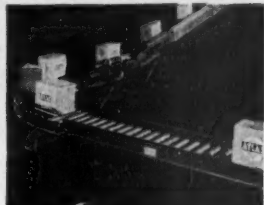
Rapistan®

CONVEYING EQUIPMENT

CONVEYORS • INDUSTRIAL CASTERS • HAND TRUCKS



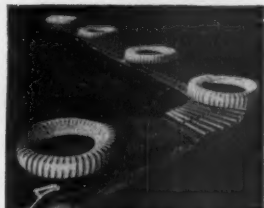
Cartons flow rapidly from storage into truck with no re-handling



Interfloor system converts waste space into valuable storage area



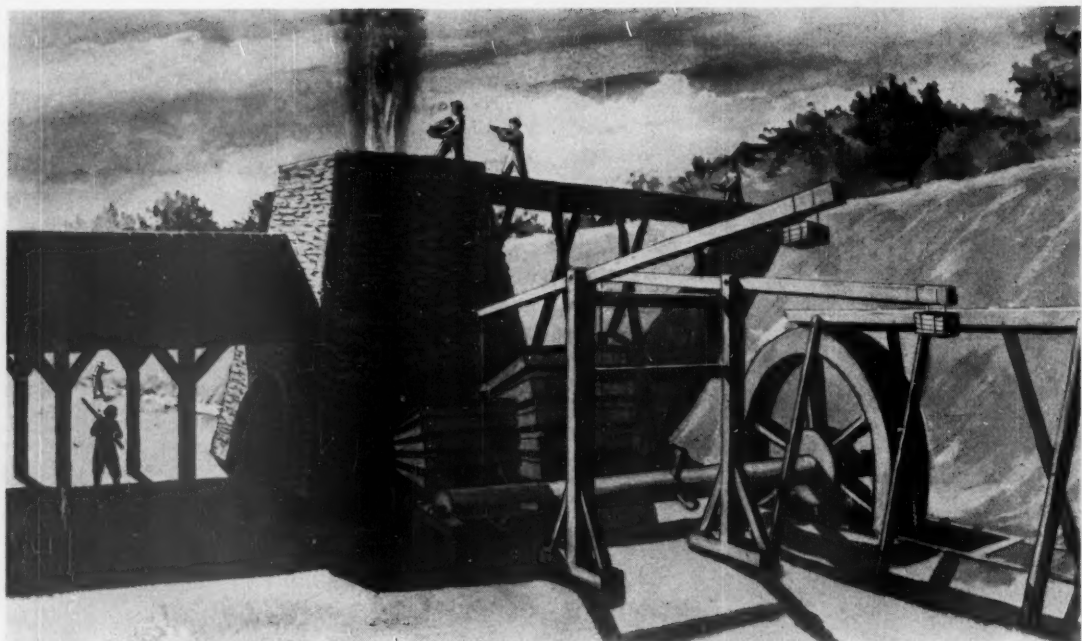
Portable power belt lifts goods into truck . . . cuts loading time



Power and gravity lines flow shipments from all storage points



Portable power belt speeds stacking of goods to maximum height



BEFORE Drawing shows the way the Saugus ironworks must have looked 300 years ago. The furnace was charged

from the runway leading from the bluff to the top. Blast of air was provided by big bellows, driven by waterpower.



MYSTERY HOLE is explored by a workman. No one yet knows what part—if any—this structure played in the original ironworks. But it's being treated with care.



HISTORIAN HARTLEY and digger Robins discuss relics found at the excavation.

New England

In the sleepy town of Saugus, Mass., a dozen miles north of Boston, the U.S. steel industry's past is being dug up. In one of the most unusual excavations in American industrial history, a 300-year-old ironworks is being brought to the surface after being buried for a couple of centuries.

Except for a plant in Virginia that the Indians destroyed before it could

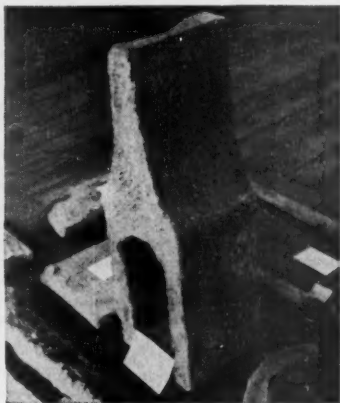


AFTER Here's how the same site looks today, photographed from the same angle. Stones are being carefully

inspected, but new materials, including steel beams, will be used to rebuild the mill stronger than 300 years ago.



HERE'S HOW iron was hammered in the old mill, as artists reconstruct it. The hammering process squeezed impurities out of the iron held on the anvil.



ORIGINAL HAMMER head, weighing 505 lb., is one of few intact pieces found.

Rebuilds Its First Industry

begin operations, the Saugus works was the first of its kind built in America. It definitely was the first American ironworks that actually produced. And it probably was the first industrial installation of any kind in the colonies.

• **Company of Undertakers**—Boston was already a thriving little town when a group of English businessmen decided to build a plant in America to

produce iron for the Massachusetts Bay area. With some local residents they put up about £15,000 in 1641 to start planning. Their company was officially known as the Company of Undertakers for the Iron Works in New England.

The first problem the undertakers had to face was labor. There was none to spare in the colonies, even to build

the ironworks. But when the company's first ship sailed from England in May, 1643, with supplies, tools, and building materials, it also carried a number of indentured Scots. In those days you could pick up a crew of men for work in the New World simply by picking up the check for their passage, food, and clothing. And they had to work for seven years to get off the hook.

• **A Lot of Concessions**—Massachusetts was glad to have the company come. To show its appreciation, in 1644 it

GIANT TOURNAPULLS

speed OAHE DAM fill



These giant earthmovers weigh to 63 tons with load. Scoops are 7' high, 33' wide.

10 units deliver 667 yds. hourly on 1½ mi. cycles

With approximately 3½ million yards of sand, gravel, clay and shale to move on Oahe Dam at Pierre, South Dakota, Campbell & Collins Joint Venture of Fargo, N. D., assigned 80% of their total dirtmoving contract to 10 LeTourneau giant, rubber-tired "A" Tournapulls. Here's how their performance speeds this Missouri River flood control project:

When photographed, the fleet was hauling tough, sun-baked, sandy clay from 2 pits, one loading on the level, the other loading down 35% grades. In the level pit, two push tractors teamed up to help Tournapulls heap loads in 93 seconds with a load distance 175 to 250 ft. In the downhill pit, using one pusher, Tournapulls cut load time to 38 seconds, loaded in about 75 ft. The "A" prime movers hauled two sizes of scrapers. From both pits, the smaller 25-ton Scrapers averaged loads of 16 pay yards . . . the larger 35-ton units, 21 pay yards.

Haul cycles from both pits averaged 1½ miles . . . with upgrades to 14% on return haul. Giant 4-wheel air brakes — with 1198 sq. in. braking surface on each wheel — per-

mitted safe use of haul speeds up to 35 m.p.h. Dumping on the run helped Tournapulls complete a 7,925-ft. round trip every 13.1 minutes, averaging 3.8 trips per hour per unit. Hourly output for each of the seven Tournapulls with 25-ton scrapers was 61 cubic yards and for each of the three with 35-ton scrapers was 80 cubic yards.

Drive 190 miles to Pierre

Six of these Tournapulls are veterans of another big earthfill project — the Shadhill Dam across the Grand River near Lemmon, South Dakota. Their efficiency record on this job for the entire 1949 season was 85%. When this work was finished, the 6 rigs drove under their own power to Pierre . . . 190 miles through main highway traffic.

Wherever you see modern rubber-tired LeTourneau earthmovers at work, you can be sure the project will be completed on or ahead of schedule, at lowest possible cost to the public or private owner, and with a reasonable profit to the contractor. LeTourneau stands for progress in the American way.



After Tournapulls spread their loads, 3 trailer-drawn Tournapeckers roll fill to specified density.



R. G. LeTOURNEAU, Inc.
Peoria, Illinois

Illustration: Tournapull-Tournapecker, Reg. U. S. Pat. & TM. © 1951

granted the company a 21-year monopoly, free use of wastelands, the privilege of erecting furnaces and forges at six sites, exemption from taxes, and the right to export iron, once local demand had been satisfied.

The colony gave the company three square miles of land at each of the six sites, allowed it to take ore, building materials, and waterways where it found them. It also granted free use of highways, equal rights under the law, and, for the ironworks employees, exemption from military service. In return, the company agreed to get the works operating within three years.

The Massachusetts General Court set a ceiling price of £20 per ton on the iron from the mill and asked the company to provide religious instruction for workers. It also told the company to admit local people as investors whenever the demand arose. In the same year, the Boston town meeting voted the company 3,000 acres of land at nearby Braintree.

• **The Beginnings**—Something seems to have been built at Braintree in 1647, but little is known about it. It apparently included a blast furnace and maybe some forges, but it probably didn't operate long, if at all. It wasn't even listed as an asset until 1650.

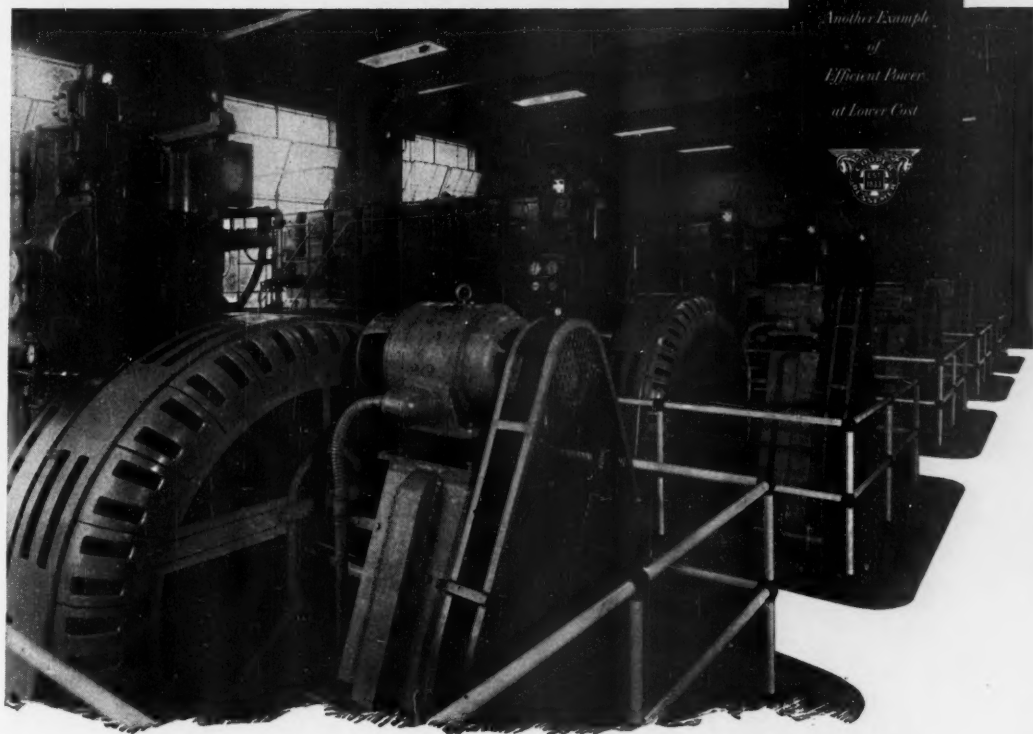
Meanwhile, arrangements for the Saugus site were going ahead. The promoters figured it was a good spot because it had running water, timber, and ore sources nearby. Besides, it was on the main route from Boston to Salem, and these towns were going to be its principal markets.

In 1646, the company got permission to buy the colony's defective guns, which probably made it the first scrap-metal user in America.

• **Trouble from Start**—Actual construction seems to have begun at Saugus early in 1646. The mill took about a year to build, and the company had trouble from the start. In May, 1647, one of the investors wrote, "Our young Iron works as yet brings us noe considerable profit." A year later, the mill was weighed down with costly accidents and losses stemming from "want of experience in the minerals in most of our workmen."

The mill's promoters had learned what they knew about ironmaking in the English iron center at Sussex. They were inexperienced when it came to using ore and other materials in the forms found in the colony. They didn't even allow for the difference in climate. The English winter seldom freezes the ground very deep, and at Saugus it appears that foundations of the mill structures weren't even sunk below the frost line.

• **Workers Weren't Puritans**—By 1648 the mill was employing 100 men. It



PATTERN FOR PEACETIME PROGRESS ...now a bulwark of defense!

THINK of this not as a single power plant, but as *thousands* of such plants in towns, industries and farm areas across America. Here the major workloads are carried by big heavy-duty diesel and gas engines driving generators . . . picked for the job because they alone can handle it most efficiently, at the lowest possible cost! The Cooper-Bessemer's shown above are typical.

If this horsepower is allowed to lag, *down goes production*—from factories and farmlands. It's as important, as *basic* as that! What's more, today's defense needs are adding *new* burdens—everywhere—burdens that can only be carried by harnessing more horsepower, more engines.

So keeping America's power turned up everywhere it's needed is a problem that must be licked! In this, Cooper-Bessemer feels a major responsibility . . . and is well prepared to *meet* it. For example, Cooper-Bessemer's latest engine developments assure reliable power with a lower-than-ever investment in materials,

equipment and plant. What's more fuel consumption is cut to the bone.

If *you* are faced with a need for defense-supporting power—stationary, marine or locomotive—find out about the *new* things being done by one of America's oldest engine builders.

The
Cooper-Bessemer
Corporation

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DIESELS • GAS ENGINES • GAS DIESELS • ENGINE-DRIVEN AND MOTOR-DRIVEN COMPRESSORS • HIGH PRESSURE LIQUID PUMPS

FLORIDA

Over 9 million people now live within a 500 mile radius of Florida.

Florida's population is increasing twice as fast as the national average.

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These fast-growing markets . . . plus Florida's matchless year-round climate . . . invite business and industry to grow with Florida.

* See Government statistics



Fabulous
Florida
COOL IN SUMMER • WARM IN WINTER

If you are interested in going into business in Florida, write us, stating type of business. We will send you helpful booklet on Florida's Fast-Growing Markets.

STATE OF FLORIDA
3105B Commission Building, Tallahassee

"... The area was solidly Puritan, but most of the workers weren't ..."

SAUGUS starts on p. 78

could turn out eight tons of iron and iron utensils a week—when it could reach peak production, which was not often. Labor troubles were among the many problems that kept the mill from hitting its stride.

The area was solidly Puritan, but most of the workers weren't. Court records show that mill employees were continually being booked for drunkenness, swearing, failing to attend church, adultery, contempt of magistrates, and violations of the austere clothing laws.

• **Blast by Bellows**—In principle, the ironmaking process at Saugus wasn't much different from operations today. Activity centered around a blast furnace situated below a bluff along the Saugus River. The charge was carried over a bridge from the top of the bluff to the mouth of the furnace. The air blast was produced by a giant bellows built next to the furnace base. A dam upstream from the mill fed a canal that turned a water-wheel to power the bellows and possibly some of the forging equipment.

The furnace itself was built of stone and lined with limestone—not much of a refractory by present-day standards. It had to be relined often.

Iron ore for the furnace came from surrounding bogs and meadows. It was a rich source and easy to get at. In addition, some rock ore was also quarried. This ore provided a flux material, besides its iron content.

When a heat was tapped, it could either be cast immediately into salable cast-iron objects or put through further processing in adjacent forges and slitting mills.

• **Good Product**—Judging by samples of the mill's product found in the ruins, the iron was almost as good as the output of modern blast furnaces. It may have been a trifle more brittle. But, considering the primitive equipment and the complete lack of controls, the product was a tribute to the instinct of the Saugus ironmakers. Instinct and experience were all they had to go by.

• **Bad Business**—Nobody ever complained about the quality of the product, but not enough of it could be sold to make the mill pay. Even when operations went smoothly, financial difficulties still plagued the company. It went through several reorganizations, but nobody on record seems to have been able to make money out of it consistently. Equipment went to pot because of poor maintenance.

Finally, around 1675, the mill

stopped altogether. By 1678, records show that it was abandoned.

• **After 270 Years**—A couple of hundred years of soil, rock, junk, and even garbage covered the historic site before anyone got really curious about what had happened to it. Then, back during the war, the Henry Ford Trade School bought an ancient house on a hill near the Saugus River. The house was to be shipped to Greenfield Village, Mich., as a birthday present to Henry Ford.

Then a Saugus woman whose ancestors lived there when the ironworks was working stopped the removal.

The house, it seems, belonged to the ironmaster of the Saugus works and was the only intact remains of the mill.

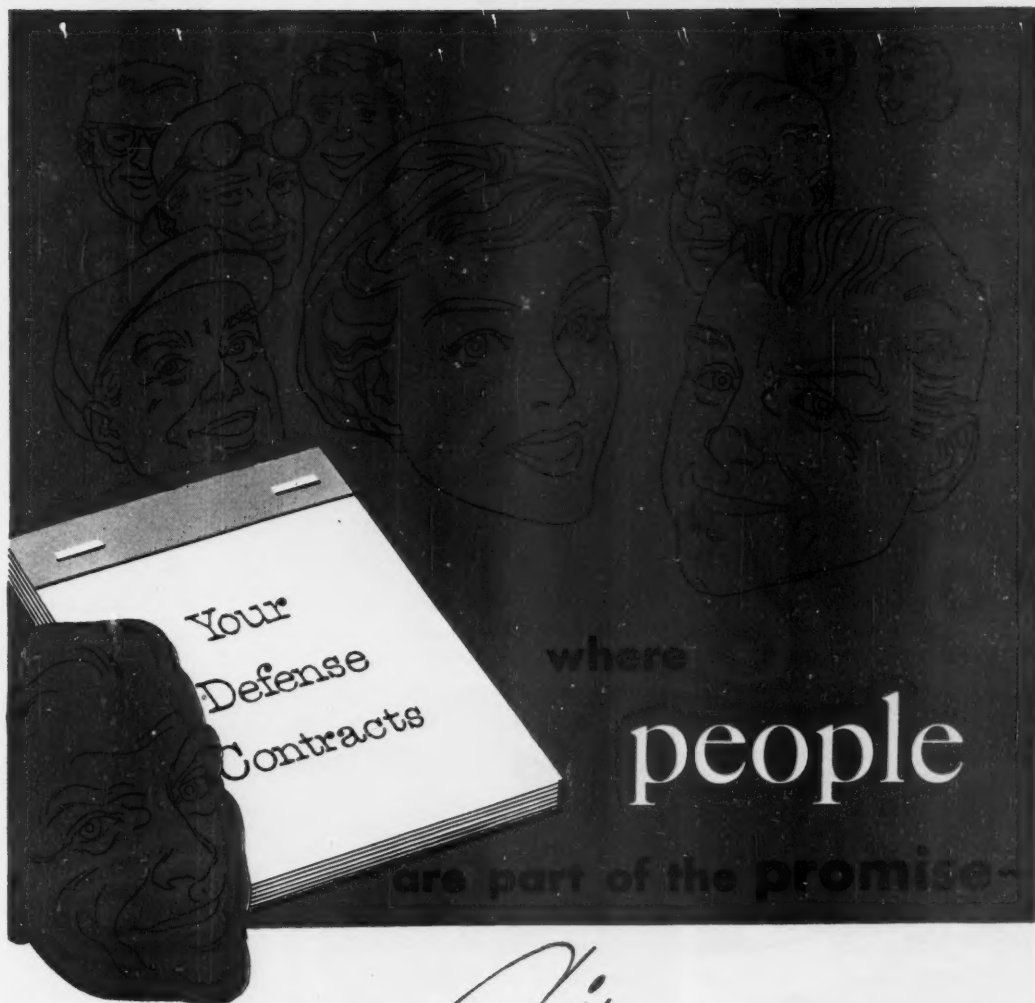
• **Restoration**—With the help of private citizens and the governor of the state, Miss M. Louise Hawkes was able to buy back Ford's present. A short time afterward the First Iron Works Assn. was set up by interested citizens of the area. Its purpose was to make arrangements for investigating and exhuming the rest of the works, then rebuilding it as a historical shrine. A local expert on colonial archeology was put to work digging. American Iron & Steel Institute agreed to underwrite a big share of the cost, and the excavation began.

The excavation is a three-way operation. The archeologist, Roland Robbins, does the digging. A Massachusetts Institute of Technology history professor, E. N. Hartley, reconstructs the mill plan on the basis of what is dug up and what has been written on ironmaking during the past 300 years. And a Boston architects' firm, Perry, Shaw & Hepburn, Kehoe & Dean, is drawing up the detailed plans and will do the actual rebuilding based on data supplied by Robbins and Hartley.

Only a few fragments of some equipment have been found; in other cases, such as the blast furnace, the bellows base, and the water-wheel, major portions have been unearthed. Practically everything but slag, furnace linings, and stones from foundations has been removed for study. About three tons of iron nails, gears, rods, and a 505-lb. forge hammer have also been found.

• **Bait for Tourists**—Right now there's little more than rubble and holes at the site of the mill. But after about a year and \$250,000 of expenditures, First Iron Works Assn. hopes to have the whole plant restored. It will probably be in better shape than it was 300 years ago—foundations, for one thing, will go below the frost line. It is expected to do well as a tourist attraction in history-minded New England.

It's ironic that the first operating manufacturing plant in America was a financial flop. But it's even more ironic to think that it'll do better as a seller of hot dogs, postcards, souvenirs, and tours than it did as an iron producer.



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EDUCATION



FOREMEN AND SUPERVISORS pay close attention to economics head A. E. Patmos, as Wittenberg's new management development course begins. Object: improved supervisory personnel for Springfield's industry and new income for Wittenberg.



PRESIDENT STOUGHTON explains plan to Chamber of Commerce head Dennerlein.



WITTENBERG UNDERGRADUATES stroll across their tree-shaded campus as usual, unperturbed by the college's sharp break with tradition to boost its finances, as . . .

Industry Picks Up Wittenberg's Tab

When the school bell rang at Wittenberg College, Springfield, Ohio, this fall it had a new note. Along with the teenager it summoned to class 21 slightly over-aged students—foremen and supervisors from Springfield's industrial plants and the first enrollees in Wittenberg's new one-week Management Development Program.

Wittenberg, third-largest Lutheran college in the country, hit upon the idea of helping supervisory-level personnel in

Springfield's industry become more effective in their jobs as one way to offset a possible big deficit in this year's operating income. The college figured its \$125,000 industry-financed program would work two ways: supply Wittenberg with about \$25,000 annually in new income, and provide industry with improved supervisory personnel.

• **In Same Boat**—Wittenberg's program for supervisors may be a unique way to help keep itself out of the red this year.

But its problem certainly isn't unique. Most colleges and universities are in the same boat, some facing the worst financial troubles they've had in a century. As educational benefits under the GI bill went out and the draft came in, the bottom dropped out of college enrollments. This, coupled with inflated operating costs, left most of the nation's small independent colleges in desperate need of financial help.

These hard-hit colleges are using



Kroger

**sells 3¢ of every \$1 worth
of food sold at retail, and...**

"NEARLY HALF OF OUR SALES ARE IN RURAL COMMUNITIES"

"More than 2,000 Kroger Stores are scattered throughout the heartland of America. Nearly half of our sales are in rural communities. The millions of prosperous farm people who trade with us demand the same high quality merchandise as city people.

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Taylor H. Hall
President, The Kroger Company

Take another look at Rural America—your biggest market for profitable new sales.

For here, one out of every 3 retail dollars is spent ... for foods, drugs, appliances, textiles, transportation—any mass product you may sell.

Is enough of your advertising reaching rural families with salesmaking power—directly in their rural magazines?

Country Gentleman is the Number One farm magazine to carry your story, because—

1. Retailers in all major lines say: "Country Gentleman helps us most to sell our best rural customers."
2. Advertisers have proved its sales influence year after year, investing more dollars in Country Gentleman than in any other farm magazine.
3. Country Gentleman is read more, used more, liked more by 2,300,000 prosperous families coast to coast, as revealed by a recent nationwide survey.

**GREATER POWER TO MOVE PEOPLE
GREATER POWER TO MOVE GOODS**



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for **better** modern styling...

The sharply-defined motifs so essential in modern architecture are greatly enhanced by the graceful design of Truscon Residential Steel Casements, as shown in striking photograph of the new Brockton Apartments, Chicago.

*Architect, Robert S. DeGolyer
Contractor, A. L. Jackson Company*

Truscon Residential Casements are equipped with Roto Operators which open or close the ventilators without the necessity of moving the screen. The ventilators are held securely in any open position. The concealed-latch locking handles provide positive cam action, drawing the ventilators tightly closed and weathertight.

Truscon Residential Steel Casements are but one of the many different types of Truscon windows for every architectural requirement.

Discuss your building needs and Truscon Steel Building Products with your architect, engineer, building contractor or local building supply dealer. Write for illustrated literature showing entire line of Truscon Steel Building Products for permanent construction in the industrial, commercial, institutional and residential fields.



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"... industry men fell in
with the idea eagerly..."

WITTENBERG starts on p. 84

every means they can think of to fight rising costs. Tuition rates are at a record high. Some schools are reducing their faculties, are not making replacements. And many are sending an S.O.S. for help to their alumni, businessmen, and even to the students' parents.

Wittenberg took its case right to the industry in and around Springfield. And industry men fell in with the idea eagerly: 24 of Springfield's 100 companies with 25 or more employees have already signed up.

• **One-Week Wonders**—The companies will give the men whom they select to take the course one-week leaves from their jobs. They'll spent eight hours a day Monday through Friday on special work in human relations, personal development, economics, and company operations.

The latest teaching techniques—motion pictures and other visual aids and acting out of roles—will be used in all the courses.

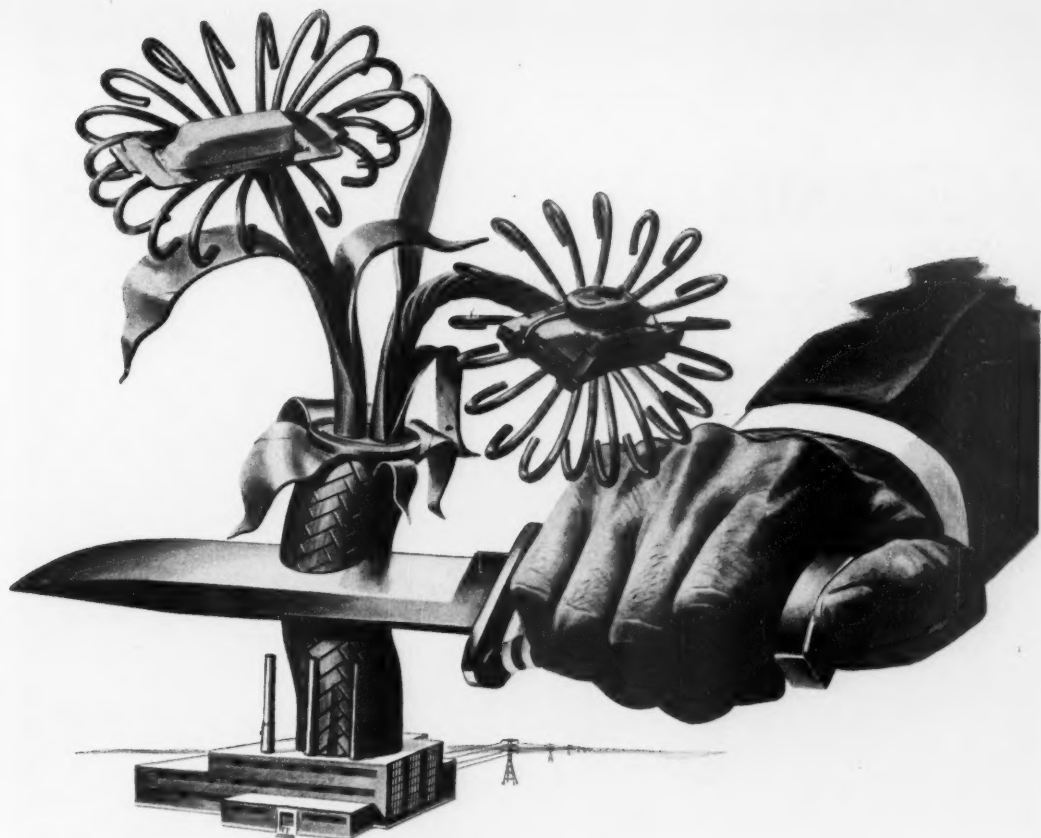
• **Big and Small Invest**—About 25 supervisors will take the course at one time. And Wittenberg estimates that by the end of the year about 800 men will have gone through the mill. The largest company to come in so far is International Harvester Co.'s Springfield truck assembly plant: It will send 145 of its 4,800 employees through the course. The smallest company enrolled, the Vining Broom Co., with 30 employees, will send 10 of its supervisors.

While the one-week college students are attending classes, they'll collect their regular salaries from their companies. The Business-Industry Mobilization Council of the Springfield Chamber of Commerce estimates that this item alone will cost the participating companies \$100,000—plus the \$30 tuition fee, which will amount to about \$25,000.

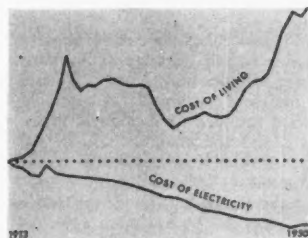
• **A Neat Profit**—To handle the program, Wittenberg added one full-time faculty member—Dr. Gerald Saddle-mire. He'll fill the newly created post of director of community education and will supervise the management course, with the help of other members of the teaching staff.

Wittenberg figures it will spend somewhere in the neighborhood of \$14,000 to present the course. Subtract this from the \$25,000 it will get in tuition fees and that will leave more than \$10,000 clear money.

• **More of the Same?**—When the program was planned last spring, the college counted on the course to help knock down a probable \$35,000 deficit in its 1951-52 financing. But now, as



ELECTRICITY . . . LEST GUNS AND BUTTER WITHER ON THE VINE



ELECTRICITY ...
so much for so many
... for so little

Cut this plant—and reap a thousand shortages!

If we are to have an adequate supply of guns *and* butter—if, indeed, we are to have enough of *either*—our electric power companies must be permitted to finish the job they have already so auspiciously and effectively begun.

Generating plants must be enlarged. Many new plants must be built. Both need critical materials, *now*, for completion by 1953 and later.

Let's not fall into the grievous error of issuing nails before the necessary hammers are available to drive them. Our "Guns and Butter" requirements cannot be fulfilled unless an adequate supply of electric power is *first* made certain.

Your power company foresees your problems. It is planning to meet them—has huge sums already budgeted for that vital purpose. But it can't meet them unless the necessary materials are made available—at *once*.

Let's not allow guns or butter to wither on the vine!

**BABCOCK
& WILCOX**



One of a series of advertisements sponsored
by The Babcock & Wilcox Company to bring
the facts about electric power to the public.

MECHANIZE

4 Scrubbing Operations into 1

with a

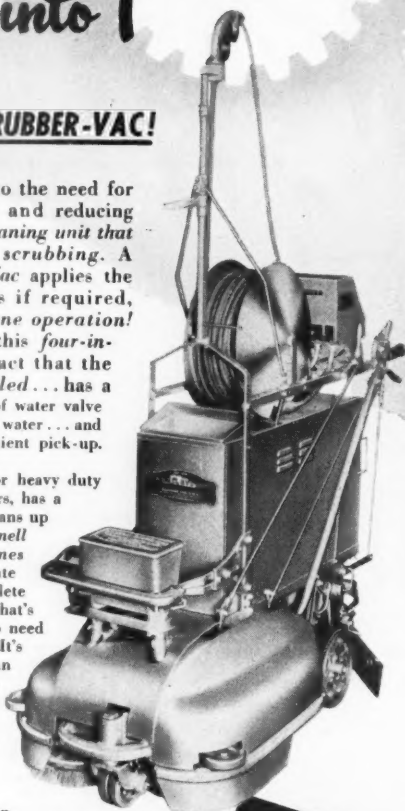
COMBINATION SCRUBBER-VAC!

Here's a timely answer to the need for conserving manpower and reducing labor costs—a single cleaning unit that completely mechanizes scrubbing. A Combination Scrubber-Vac applies the cleanser, scrubs, rinses if required, and picks up—all in one operation! Maintenance men like this four-in-one feature; also the fact that the machine is self-propelled... has a positive clutch... new type of water valve that assures uniform flow of water... and powerful (quiet) vac for efficient pick-up.

The Model 213P at right, for heavy duty scrubbing of large-area floors, has a 26-inch brush spread, and cleans up to 8,750 sq. ft. per hour! Finnell makes Scrubber-Vac Machines for small, vast, and intermediate operations. From this complete line, you can choose the size that's exactly right for your job (no need to over-buy or under-buy). It's also good to know that you can lease or purchase a Scrubber-Vac, and that there's a Finnell man nearby to help train your maintenance operators in the proper use of the machine.

For demonstration, consultation, or literature, phone or write nearest Finnell Branch or Finnell System, Inc., 3810 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

*Conserve Manpower with
Completely Mechanized Scrubbing*



Applies cleanser,
scrubs, rinses,
and picks up—in
ONE operation!

FINNELL SYSTEM, INC.

*Originators of
Power Scrubbing and Polishing Machines*



BRANCHES
IN ALL
PRINCIPAL
CITIES

"... Dr. Stoughton took his hat in his hand and made the rounds ..."

WITTENBERG starts on p. 84

the result of some unexpected windfalls—and if conditions don't worsen—the college may be able to use part or maybe all of this money to expand its program of community education.

At least that is the hope of Wittenberg's president Clarence C. Stoughton, who has for many years wanted to expand the college's services to the community.

• **Rough Going**—Actually, dire necessity mothered the Management Development Program. Wittenberg, the largest of 13 colleges sponsored by the United Lutheran Church in America, has a total enrollment of about 900 students, and it has around 90 full- and part-time faculty members.

Last year, after the Korean war outbreak, enrollment fell below expectations—and so did student fees. They fell about \$160,000 short of the total fees and tuition the college received three years earlier, when enrollment hit 1,460.

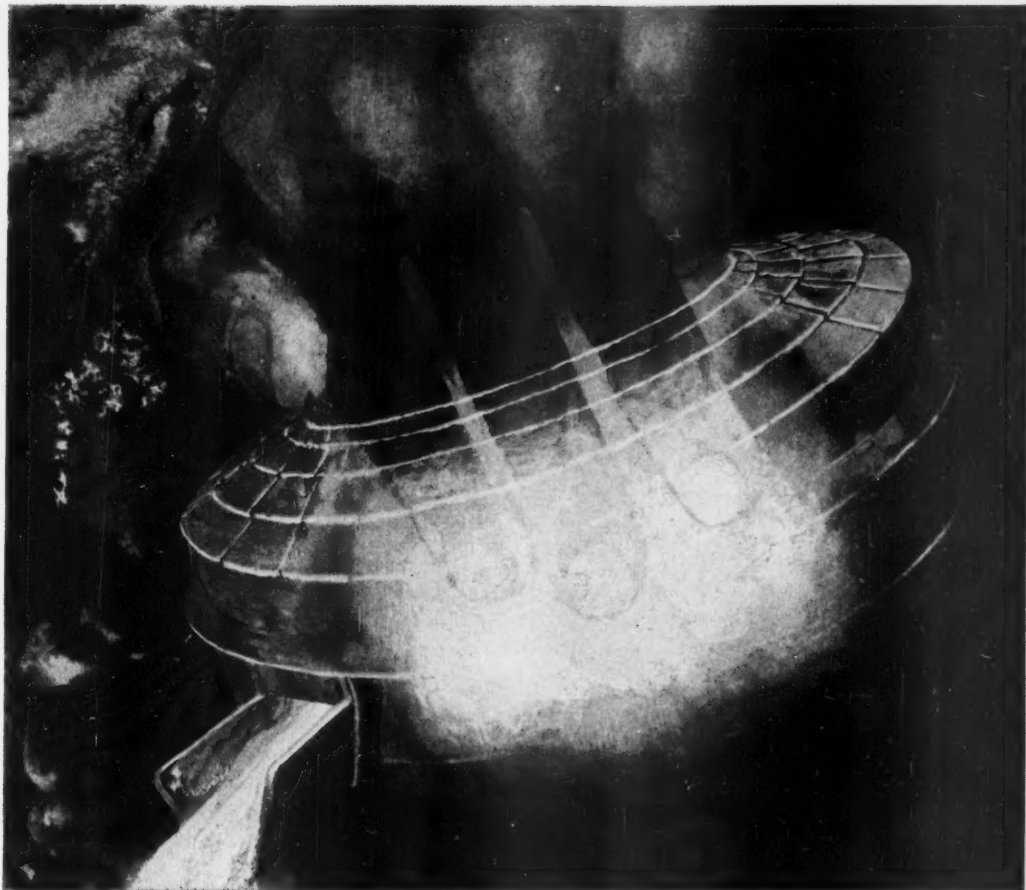
Dr. Stoughton cut corners wherever he could. But the going was rough. And last December the college found itself \$55,000 short of meeting operating expenses of \$865,000. Dr. Stoughton took his hat in his hand and made the rounds—and wiped out the deficit.

• **Another Crisis**—But when the 1951-52 budget was set up last spring, the college faced another \$35,000 deficit in this year's revenues. So Stoughton talked the situation over with Joseph C. Shouplin, Springfield industrial leader. Shouplin told Dr. Stoughton of industry's need for more leaders. Out of their discussion came the idea for a training course for foremen and supervisors.

Springfield's Chamber of Commerce pitched in to help, through its Business-Industry Mobilization Council. Chamber president Peter J. Dennerlein broached the idea to Springfield industrialists, and the chamber also helped Dr. Saddlelire work out details of the program.

• **Just the Beginning**—Dr. Stoughton is certain that the Management Development Program will continue for at least two years. Weeks before the course began, 1,300 applications were on hand.

But to Dr. Stoughton, the course is just a beginning. He wants to offer Springfield adults specialized courses in drafting, accounting, salesmanship, chemistry, and other subjects. Such a program, he feels, is a way for the small college to keep its head above water as well as a way to broaden the college's worth to the community.



What's cooking...

WHAT'S COOKING in the seething, white-hot inferno of this electric arc furnace?

The fingers? No, they *simulate what's doing the cooking*.

These fingers represent giant rods of carbon—or graphite, carbon's refined cousin—that carry the heat-creating electricity into the furnace. Only carbon or graphite in the form of huge electrodes can do this, and stand up under the terrific temperature of 6,000 degrees or more!

Here, in this roaring cauldron, these fiery fingers are making the alloying ingredients for stainless steel. They are also used to make other tough and hard varieties of fine steel.

But steel making is only one important way in which carbon and graphite serve industry. Carbon arcs fire the furnaces that make calcium carbide—a source of acetylene for many modern plastics and chemicals. Motion picture

screens are illuminated by the brilliant light of the carbon arc. And without carbon we wouldn't have dependable, long-life dry batteries for flashlights, radios and hearing aids.

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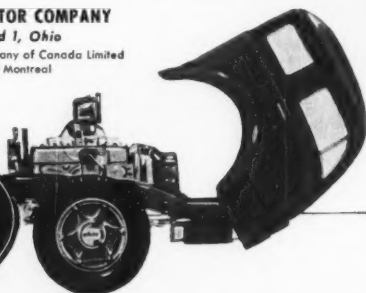
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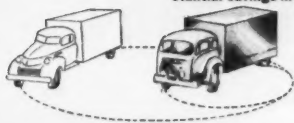
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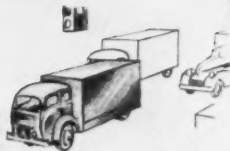
SHORTER turning radius for better maneuvering, and substantial savings in driving time.



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SAFER, BETTER to drive because of wide-angle vision, new cab comfort, driving ease, faster acceleration.



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It's Bundyweld, preferred in industry and defense wherever tubing parts must ride rough herd through vibration, stress, shock or strain. The reason is simple . . . and exclusive. Bundyweld, the multiple-walled

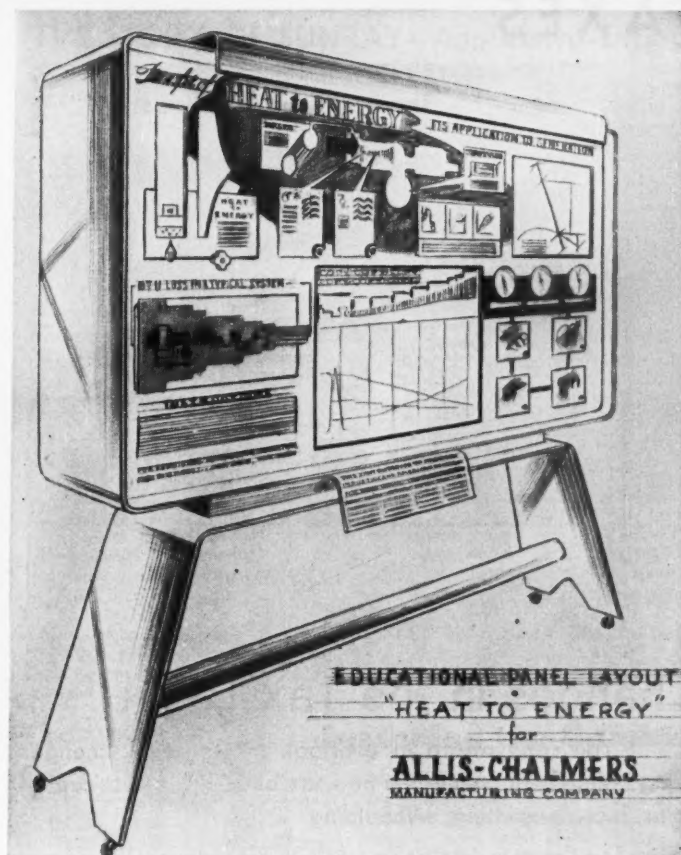
type of Bundy® tubing is double-rolled from a single strip with inside beveled edge. No other like it anywhere.

For information on availability, for help in design or fabrication of any tubing part, why not come to headquarters for small-diameter tubing today?

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DETROIT 14, MICHIGAN

World's largest producer of small-diameter tubing
AFFILIATED PLANTS IN ENGLAND, FRANCE AND GERMANY



INDUSTRY sponsors displays like this for use in technical schools. The theory:

Visual Aids Teach Engineers

Sometime early next year, 16 major firms will launch an educational project that they hope will do two things:

- Recruit more engineers for their own badly undermanned staffs (BW—Sept. 29 '51, p. 74).

- Establish their brand names firmly in the minds of the rising generation of engineers—who will be doing the buying for their employers five years or so from now.

- **Learn for Fun**—The 16 firms are backing a brand-new visual approach to technical education. They will supply 80 engineering schools with a set of pushbutton displays designed to explain scientific theories and their industrial applications.

The idea is that the visual approach will make learning easier. That means the schools will be able to turn out better trained engineers. It may also mean that more students will be willing to tackle the traditionally formid-

able engineering courses. And that in turn would increase the sadly shrunken enrollment of the engineering schools.

- **Benefits**—Any such increase in enrollment would benefit all industry. But the sponsoring firms aren't counting on that alone. They expect to gain two direct advantages from hammering their names into the minds of the undergraduates.

They hope that:

- The fledgling engineer, with a flock of companies scrambling for his services at graduation, will sign up with the outfit that eased his path through Physics X.

- Even if the engineer goes to work for somebody else, he will still remember the company's name and products with favor.

To knot the tie that binds, sponsoring companies will try to build up correspondence with the students and to infiltrate their notebooks with com-

pany data. Recruiting staffs may even accompany the displays.

- **Development**—The whole program is the joint brainchild of Gardner Displays Co., of Pittsburgh, and Carl W. Muhlenbruch, Associate Professor of Civil Engineering at Northwestern and chairman of the teaching aids committee of the American Society of Engineering Education. After various surveys, probings, and delays, the plans were settled last fall. The first displays should be ready next February.

Gardner and Muhlenbruch asked more than 100 engineering schools if they wanted visual aid. The answer, generally, was yes, and 80 colleges signed up. Next, some 20 blue-chip companies were approached for backing. They liked the idea, too.

- **Ten Zones**—Confident now, Gardner set up Educational Exhibits, Inc., a wholly owned subsidiary, to create, build, and transport the displays. Here's how the program lines up:

The nation is divided into 10 zones, with eight colleges apiece. Each zone gets an identical set of 16 displays (sponsor companies provide one for each zone). Two exhibits at a time go to each school, for a one-month stay. When time's up, the displays move on to another school.

Each display is a 4-ft. by 6-ft. panel. Animated and operable units dish out scientific theories, like the application of wave theory to sound. Others show industrial applications of chemistry, physics, and mathematics.

Take the panel that illustrates rolling and forging steel. The student may be asked to choose the best method of treating steel for a bridge. If he thinks forging is the answer, he pulls a lever and a hammer drops on simulated steel (actually foam-rubber). If he wants to check other methods, he works the levers to see what happens.

College instructors will either work the displays into their courses or use them as review sessions.

- **Complicated**—Designing the intricate exhibits, Gardner people are trying every trick in the bag, including float charts, animated dials, and changing light intensities. Each display is a combination of ideas from the sponsors, Gardner, members of the teaching aids committee of ASEE, and a special committee of public relations men who check displays for eye-appeal. Reaching conclusions is becoming pretty complicated.

This year's program will cost each sponsor \$20,000. Gardner says there are now 21 companies anxious to participate. The Allis-Chalmers display is already in the works. Other companies, including IBM, RCA, Alcoa, and International Harvester, are waiting for allotment of funds or assignment of subject matter.



*They leave earlier...
but stay longer!*

● Getting out the mail is often a tedious and tiring job. A postage meter helps both your mail and your Girl Friday to get away earlier... and adds to her satisfaction in the job.

● With the DM, every small office can have metered mail. This new desk model, little larger than your telephone, is a real postage meter... does away with stamp licking and sticking forever!

● The DM prints postage directly on the envelope, any amount needed, for any kind of mail. Prints a dated postmark at the same time, and a small advertisement, if you like... Holds as much postage as you want to buy, always provides the right postage... prevents loss, damage, "borrowing"... Has a built-in moistener for sealing envelope flaps, supplies postage for parcel post... And keeps its own postage records... Quick, efficient, convenient!

● Ask the nearest Pitney-Bowes office to show you—or send the coupon for free booklet.



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Offices in 93 cities in
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PITNEY-BOWES INC.
1487 Pacific St., Stamford, Conn.
Please send free booklet on the DM.

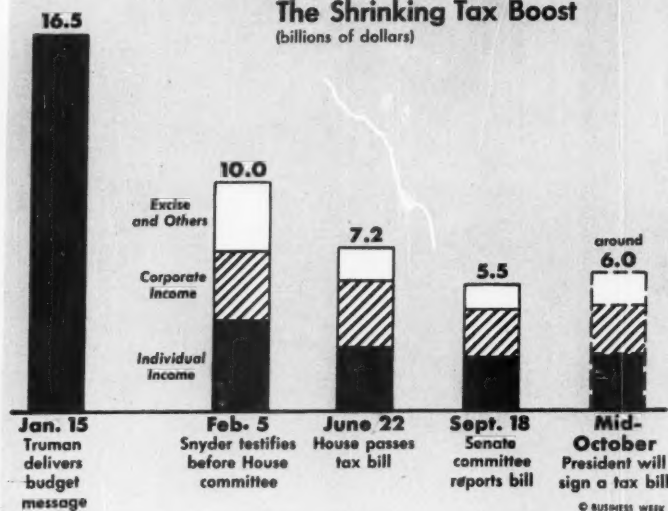
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Firm _____
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YOUR
AD
HERE



TAXES

The Shrinking Tax Boost
(billions of dollars)



FINAL FIGURE might change slightly, but there's no doubt about technical . . .

Changes in the Tax Law

You can't afford to overlook the technical changes being quietly written into the new tax bill. They affect capital gains, income-splitting, withholding.

There's a lot more to the 1951 tax bill now before Congress than whopping increases in individual, corporate, and excise rates.

The proposed rate hikes will take a painful bite out of personal and business incomes. That's why they get all the headlines. But the tax writers are making other major changes, too—plugging loopholes, easing hardships, and bringing new taxpayers under the Revenue Code.

• **Area of Agreement**—A conference committee still must dispose of major differences in the House and Senate versions of the bill. But there's a large measure of agreement on the unpublicized changes. That automatically puts them beyond the conference's jurisdiction and means they are a cinch to become law. Here's a rundown on the more important of these pending changes:

I. Capital Gains on Home Sale

The substantial increase in housing values over the past decade has put many homeowners in a financial pickle. Frequently when they move to another

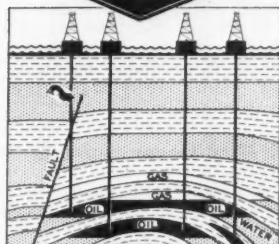
town, or change their residence in order to accommodate larger families, they find themselves whacked by a very hefty tax.

Trouble is, they usually pick up nothing on the deal out of which to pay off the liability. Under existing law, the difference between the price paid and the price received, for a capital asset such as a house, is a long-term taxable gain; the bite can go as high as 25% of the "profit."

But, nine times out of ten, the seller turns right around and planks down the proceeds for roughly similar housing. He hasn't improved his lot at all, but he owes the U.S. Treasury plenty of money.

Take a man who bought a house for \$10,000 back in 1940. He sells it for \$15,000 today. He is liable for a tax on the \$5,000 difference—even though he sinks the entire sum into another similar house.

The bill now before Congress would take this homeowner off the hook. It would make his gain tax-exempt, providing he buys a substitute residence for \$15,000 or more within a year. If the replacement cost is less than the



The Oil is Here

Mustang and Red Fish oil fields in the Corpus Christi Bay area of Texas have yielded ten or more pay sands since discovery in 1949. Although the fields have not yet been clearly defined they are apparently developing into a substantial series of multizone reservoirs. It is proving out geophysical exploration that was recorded in part, a dozen years ago. SUNRAY has some 8000 acres of oil prospect leases and ten oil producing wells in these fields to date. They offer SUNRAY one of its most concentrated and promising areas for immediate development.

Lessening the Gamble Under the Ground

Men first discovered petroleum seeping to the surface through springs or cracks in the earth. Using their knowledge of water-well drilling, they usually drilled where they saw oil on the surface. There was *relatively little gamble* in drilling America's first oil wells.

As the search for more oil progressed, and it became necessary to drill deeper and deeper into the earth, drillers could no longer depend upon surface signs to tell them where to drill. The "wildcatter", determined to find oil in a new territory, risked his money blindly—hoping that with luck he would discover a new oil field.

Today the "wildcatter" turns to science before he risks money on drilling. Now, before thousands of dollars are spent for drilling a well, the operator knows pretty well what areas and locations *should* prove productive. By modern electronics those who search for new oil are able to send electrical impulses deep into the earth for helpful information. These impulses reveal hidden structures and often indicate the probability of oil formations. SUNRAY during the past thirty-one

years, has constantly increased its use of modern exploratory techniques. This scientific search for new oil is being pursued in all areas where SUNRAY operations are carried on, but particularly in Gulf Coast and West Texas, Louisiana, Oklahoma and the Rocky Mountain states, which offer good discovery possibilities.

Working hand in hand with geophysicists and seismograph crews, are geologists and finally the drilling crews. By doing preliminary exploration, before moving in drilling rigs, American ingenuity has made vast gains in *lessening the gamble under the ground*.

Is oil a profitable business? It is . . . to the landowner . . . the royalty owner . . . to oil company employees . . . to oil company stockholders . . . to the motorist and commercial users who benefit from oil's progress . . . and to the community, state and nation which benefit from the industry's substantial taxes. Is oil a profitable business? Yes! What's wrong with that?

FREE — "What's Wrong with Being an OIL COMPANY?" by Ernestine Adams, a most revealing article which "calls a spade a spade". Write for your copy—Address Sunray Oil Corporation, P. O. Box 2039-B1, Tulsa, Oklahoma.



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BETTER FABRICS ...

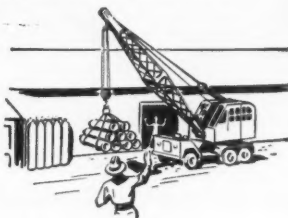
Fine yarn filaments, strong plump fibers—these are the marks of a good textile mill. And, in many top mills, you'll find American Blower equipment helping in the control of inside temperature and humidity. For example, several of our large AHS Fans were ordered recently by an important Southern mill. The thing operators like about these fans is their non-overloading power characteristics and their remarkable efficiency over a wide range (which saves them money). May we help you with a similar problem?



HOSPITAL COMFORT ...

A new Veterans' Hospital is going to be mighty comfortable—at least when it comes to ventilation. Reason—34 American Blower Sirocco Fans which were recently installed. These fans deliver more air per revolution than any other type

of fan, operate at lower tip speeds, are unusually quiet, save power and require only a minimum of space for installation. For the best in air handling equipment, call American Blower.



POWER SAVER ...

If you're concerned with power transmission, you'll want to know about our Gyrol Fluid Drives. Developed originally for use with mechanical draft fans, Gyrol Fluid Drives are today widely used in industry. They offer three important advantages—smoother acceleration, overload protection and substantial power savings. One company uses Fluid Drives on a crane that picks up acetylene tanks. Before they were installed, the tanks got such a violent swing from the quick start they would often damage building walls. Since using the Fluid Drives, they've had no trouble.

MAY WE SERVE YOU?

American Blower heating, cooling, drying, air conditioning and air handling equipment can do much toward improving comfort and efficiency in business. For data, phone or write our nearest branch office.

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DIVISION of AMERICAN RADIATOR & Standard Sanitary CORPORATION

YOUR BEST BUY AMERICAN BLOWER AIR HANDLING EQUIPMENT

Serving home and industry:

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"... unmarried head of a household was ignored in the rush in 1948 ..."

TAX CHANGES starts on p. 94

sale price of the original house, only the difference becomes a taxable gain.

II. Extending Income-Splitting

Back in 1948, Congress extended the tax benefits enjoyed by residents of community-property states to all married taxpayers. They were permitted to average their incomes for tax purposes—the light income of one spouse pulling the heavy earnings of the other into a lower tax bracket.

The plan was sold as, among other things, necessary relief for the man whose \$600-per-dependent exemptions have been shrinking rapidly in these days of rising living costs. But the unmarried man who heads a household was ignored in the rush—though he may have as many dependents as any benedict.

• **Two Versions**—Both houses have finally noticed this situation, and, this year, they are going to do something about it. There is still some disagreement on details, however.

The House voted to give single men who provide homes for relatives one-half the benefits now enjoyed by the married men. The effective date would be Aug. 1, 1951.

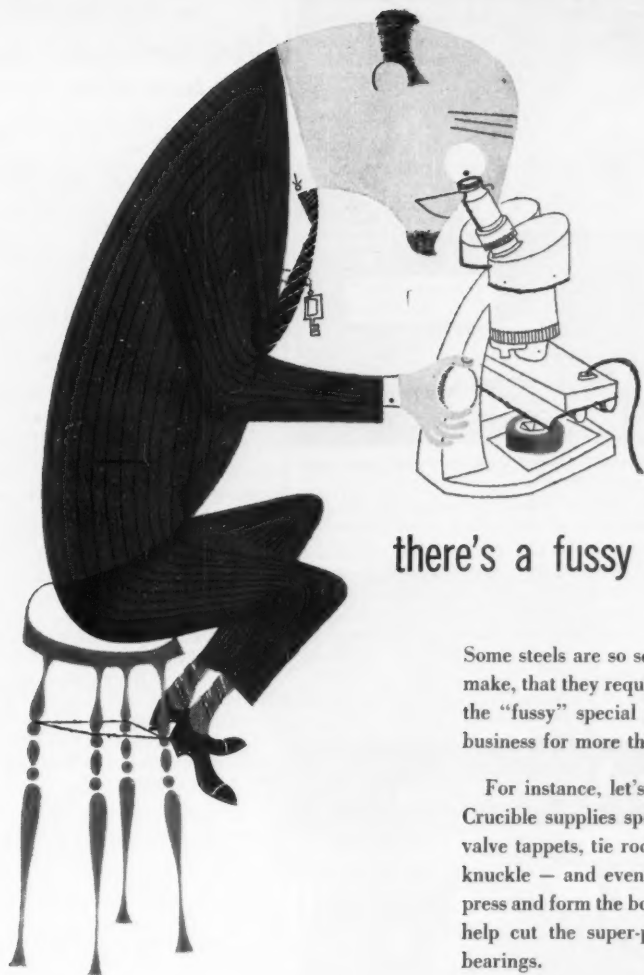
The Senate hasn't been so generous. Its tax writers want to grant only one-fourth the advantages enjoyed by married couples, with the effective date set at Oct. 1.

III. Mine Development Costs

As it stands today, the Revenue Code requires that all costs of developing a mine—prospecting, sinking shafts, digging tunnels—must be treated as capital outlays. These kinds of expense may not be written off as business deductions until a commercial production level is reached. And at that time the cost of, say, a new tunnel is considered a production cost of developed ore, rather than a new investment.

This provision has sometimes served to make exploration and development of new properties expensive to the point of being prohibitive. Yet the defense program requires new minerals sources. So Congress has decided to remove a barrier and at the same time wipe out an arbitrary line between pre- and post-production outlays.

Once the pending bill becomes law, development costs since Dec. 31, 1950, can be deducted from gross income, prorated over the period in which ores



there's a fussy side to steelmaking

Some steels are so sensitively compounded, so tricky to make, that they require special skill in handling. Making the "fussy" special purpose steels has been Crucible's business for more than fifty years.

For instance, let's look at the automobile you drive: Crucible supplies special steels for gears, axles, valves, valve tappets, tie rods, springs, bolts, forgings, steering knuckle — and even the trim. Crucible tool steels help press and form the body, while Crucible high speed steels help cut the super-precision parts for the motor and bearings.

The automobile is but one example of Crucible specialized knowledge at work. Multiply this by the needs of *all* Industry and you can readily see what a wealth of experience Crucible makes available to you. Use this experience freely; when you need special steels — call on us.

CRUCIBLE

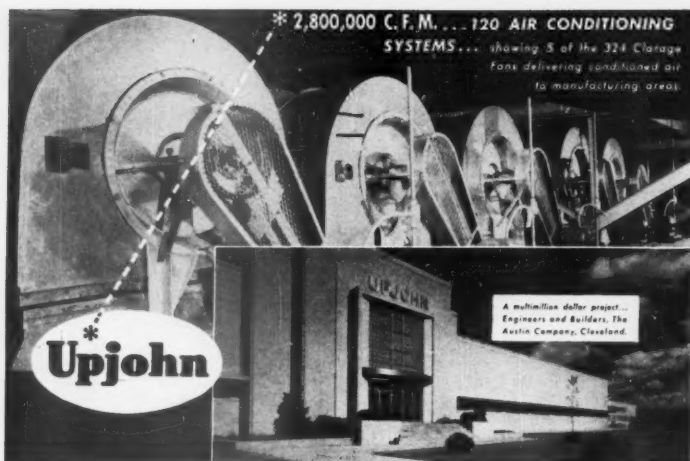
first name in special purpose steels

51 years of *Fine* steelmaking

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

Spaulding Works, Harrison, N. J. • Midland Works, Midland, Pa. • Park Works, Pittsburgh, Pa. • Spring Works, Pittsburgh, Pa.
National Drawn Works, East Liverpool, Ohio • Sanderson-Halcomb Works, Syracuse, N. Y. • Trent Tube Company, East Troy, Wisconsin

* 2,800,000 C.F.M. ... 120 AIR CONDITIONING SYSTEMS... showing 5 of the 324 Clarage Fans delivering conditioned air to manufacturing areas.



Upjohn

A multimillion dollar project... Engineers and Builders, The Austin Company, Cleveland.

Fine Pharmaceuticals!...the making of over 700 different kinds has started in this great plant of the Upjohn Company, 10 minutes south of Kalamazoo.

Here much of the manufacturing...to maintain integrity of product...is dependent upon air conditioning. 120 complete systems handling 2,800,000 c. f. m. are installed.

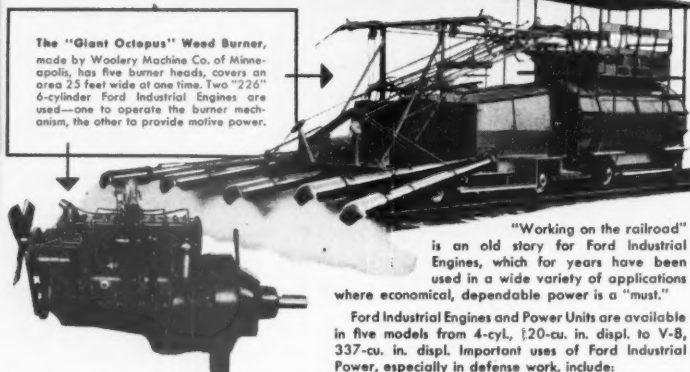
CLARAGE
—HEADQUARTERS for Air Handling and Conditioning Equipment

APPLICATION ENGINEERING OFFICES IN ALL PRINCIPAL CITIES

Upjohn has had more than a quarter-century of experience with Clarage Equipment. It well may be that this was the deciding factor in selecting Clarage **HEAVY-DUTY** Fans for **every one** of the air conditioning systems operating in this new Upjohn plant. CLARAGE FAN COMPANY, Kalamazoo, Michigan.

Ford Burns Weeds...

The "Giant Octopus" Weed Burner, made by Woolery Machine Co. of Minneapolis, has five burner heads, covers an area 25 feet wide at one time. Two "226" 6-cylinder Ford Industrial Engines are used—one to operate the burner mechanism, the other to provide motive power.



"Working on the railroad" is an old story for Ford Industrial Engines, which for years have been used in a wide variety of applications where economical, dependable power is a "must."

Ford Industrial Engines and Power Units are available in five models from 4-cyl., 120-cu. in. displ. to V-8, 337-cu. in. displ. Important uses of Ford Industrial Power, especially in defense work, include:

RAILROAD MAINTENANCE CARS AND SWITCH ENGINES... LIFT TRUCKS... WELDERS... PUMPS AND COMPRESSORS... STANDBY POWER UNITS AND MANY OTHERS

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Ford
**INDUSTRIAL ENGINES
AND POWER UNITS**

**YOUR JOB IS WELL-POWERED
WHEN IT'S FORD-POWERED**

"... No more windfalls from short-term losses against long-term gains ..."

TAX CHANGES starts on p. 94

resulting from such development are sold. If he chooses, however, the developer can defer the benefits of such deductions, treat them as a capital expenditure, and thus diminish any capital gain on future sale.

IV. Curb on Capital Gains

The Treasury has long been after Congress to plug what the department calls a "loophole" in the capital gains tax.

As the law now stands, only half of a long-term gain or loss is used to compute the tax owed. For short-term capital transactions, the full amount is reckoned. As a result, a \$1 short-term loss can be used to offset—that is, wipe out the tax on—a \$2 long-term gain.

• **Plugging a Hole**—The bill now in the works would eliminate any such windfalls in the future. Once it's passed, long-term gains would have to be used in tax computations at 100% of face value. But if there's an excess of long-term gains over losses, the 50% rule would still apply.

Here's a comparison of the old and the new provisions as they would apply to a typical situation:

	Existing Law	Pending Bill
Short- (or long-) term loss	\$1,000	\$1,000
Long term gain	\$2,000	\$2,000
Amount of long-term gain used in computation	\$1,000	\$2,000
Net taxable gain	0	\$1,000

The Treasury is expected to get \$28-million in extra revenue as a result of this change.

V. High-Bracket Withholding

The Internal Revenue Code now authorizes employers to withhold tax due on workers' income at no more than the first surtax bracket rate. Employees with earnings that put them in higher brackets have to do some extra checkwriting. They either have to make a payment with their March estimate of future earnings, or pay in quarterly installments.

Both employees and employers have long wanted to change all this. But the Treasury has never found it practical to work out withholding tables for the higher brackets. There's too much variation in deductions, too much chance of income not subject to withholding—the additional tax due varies widely from case to case.

But Congress wants to take the paper

BUSINESS IN MOTION

To our Colleagues in American Business ...

For several years this space has been used to tell how Revere has collaborated with its customers, to mutual benefit. Now we want to talk about the way our customers can help us, again to mutual benefit. The subject is scrap. This is so important that a goodly number of Revere men, salesmen and others, have been assigned to urge customers to ship back to our mills the scrap generated from our mill products, such as sheet and strip, rod and bar, tube, plate, and so on. Probably few people realize it, but the copper and brass industry obtains about 30% of its metal requirements from scrap. In these days when copper is in such short supply, the importance of adequate supplies of scrap is greater than ever. We need scrap, our industry needs scrap, our country needs it promptly.

Scrap comes from many different sources, and in varying amounts. A company making screw-machine products may find that the finished parts weigh only about 50% as much as the original bar or rod. The turnings are valuable, and should be sold back to the mill. Firms who stamp parts out of strip have been materially helped in many cases by the Revere Technical Advisory Service, which delights in working out specifications as to dimensions in order to minimize the weight of trimmings; nevertheless, such manufacturing operations inevitably produce scrap. Revere needs it. Only by obtaining scrap can Revere, along with the other companies in the copper and brass business, do the utmost possible



in filling orders. You see, scrap helps us help you.

In seeking copper and brass scrap we cannot appeal to the general public, nor, for that matter, to the small businesses, important though they are, which have only a few hundred pounds or so to dispose of at a time. Scrap in small amounts is taken by dealers, who perform a valuable service in collecting and sorting it, and making it available in large quantities to the mills. Revere, which ships large tonnages of mill products to important manufacturers, seeks from them in return the scrap that

is generated, which runs into big figures of segregated or classified scrap, ready to be melted down and processed so that more tons of finished mill products can be provided.

So Revere, in your own interest, urges you to give some extra thought to the matter of scrap. The more you can help us in this respect, the more we can help you. When a Revere salesman calls and inquires about scrap, may we ask you to give him your cooperation? In fact, we would like to say that it would be in your own interest to give special thought at this time to all kinds of scrap. No matter what materials you buy, the chances are that some portions of them, whether trimmings or rejects, do not find their way into your finished products. Let's all see that everything that can be re-used or re-processed is turned back quickly into the appropriate channels and thus returned to our national sources of supply, for the protection of us all.

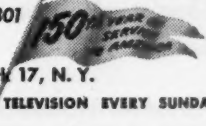
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Founded by Paul Revere in 1801

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Chalk up another sale for Trade Mark Service

Reach for your telephone directory and look through the 'yellow pages' in the Classified section. There you'll see the trade-marks and brand names of many well-known manufacturers. And below them, you'll see the names and locations of local dealers who sell these products. *That's Trade Mark Service.*

All the way from Seattle to Miami... every day... dealers chalk up sale after sale of branded merchandise... because of Trade Mark Service.

Trade Mark Service provides you with a powerful sales tool... it helps you cash in on the fact that 9 out of 10 shoppers use the 'yellow pages' of the telephone directory for buying information. This dealer identification plan means more sales for your authorized dealers.



FOR FURTHER INFORMATION, CALL YOUR LOCAL TELEPHONE BUSINESS OFFICE OR SEE THE LATEST ISSUE OF STANDARD RATE AND DATA



work off the taxpayers' hands wherever possible. So, in the bill now in the works, it will permit employers to deduct as much as a worker desires. The amounts would have to be set to suit each man's need, case by case.

VI. Family Partnerships

Congress is taking steps to remove a cloud that hangs over many family partnerships.

The law today says clearly that property income is taxable against the owner. But the Bureau of Internal Revenue has long cast a fishy eye on family partnerships where one member's investment was the gift of another. This kind of arrangement could be a device for deliberate dodging of taxes, the bureau feels, by diverting income really earned by a high-bracket man to a lower-bracket relative.

The bureau has frequently ignored such transfers and insisted on taxing the giver, where he has retained suspicious-looking rights in the donated capital.

Now Congress wants it understood that the motives of the giver are none of BIR's business. Hereafter, where there has been a bona fide transfer of ownership, a donated partnership interest must, for tax purposes, be respected by the bureau. Only exception: where the donor gets a smaller share of income than his contribution of services, or his owned capital, would indicate.

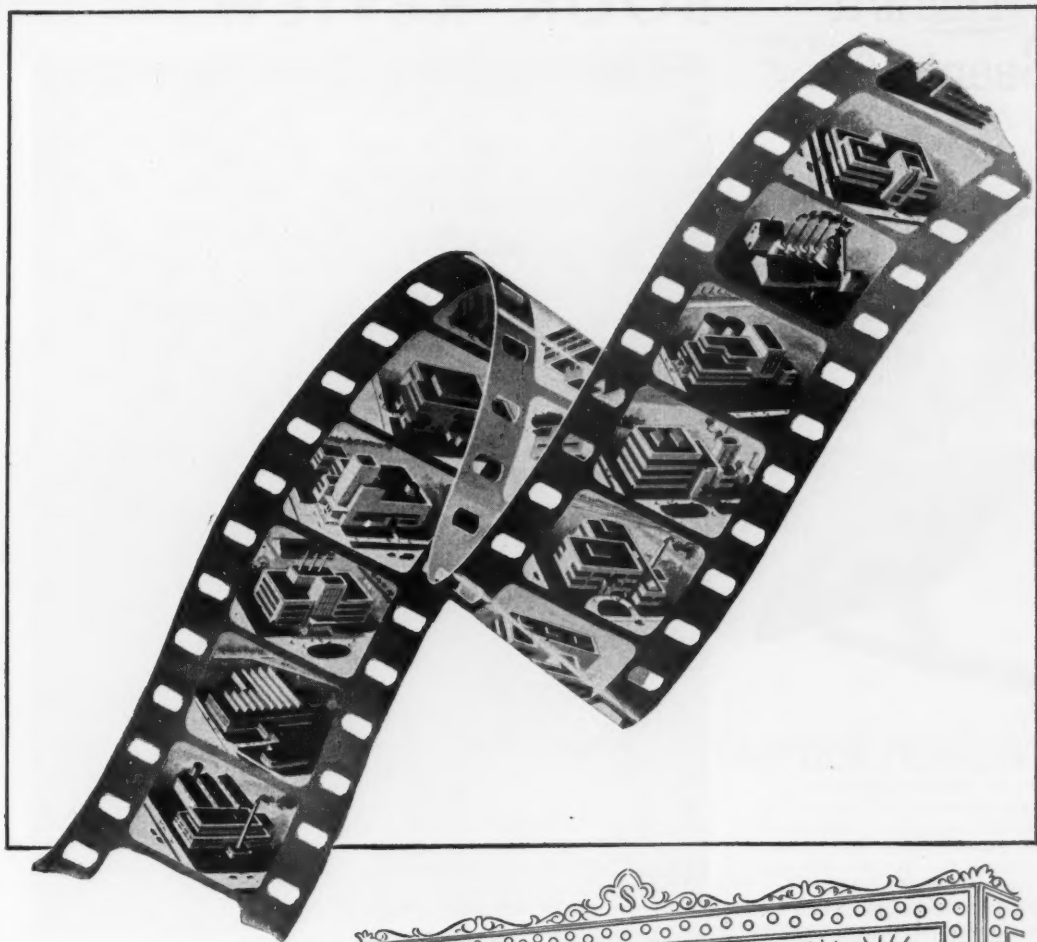
TAX BRIEFS

Customs simplification looks dead for this year, despite the fact that the Ways and Means Committee has released a bill to the full House. American producers, who fear increased foreign competition, will delay Senate action until adjournment.

The 1950 tax deadline for many corporations has been extended a second time—to Nov. 15. The Treasury had given companies a six-month extension beyond Mar. 15, because late passage of the excess profits tax had held up corporate accounting.

Fellowships are taxable as income when used to finance creative work or advanced research. The Bureau of Internal Revenue has ruled that only funds granted for education or training are tax-free.

Tax-free divestment of subsidiaries or large stock interests would be possible under a Senate proposal in the pending tax bill. Such "spin-offs" would make it less painful to comply with antitrust laws.



This picture is COLOSSAL

EVEN the colorful adjectives of moviedom can't do justice to the amazing things that are going on in the busy industrial Southland today!

Everywhere along the 8,000-mile Southern Railway System, you see new factories going up... and infant industries growing up.

This is the picture of the modern South-

land, where challenging opportunities for industries are literally everywhere... in the abundant resources of the earth... in the expanding markets... in the unique benefits and advantages of every kind that are part and parcel of this "industrial wonderland."

"Look Ahead—Look South!"

Ernest E. Harris
President



SOUTHERN RAILWAY SYSTEM

The Southern Serves the South

This is a Beauty Aid?



Yes, and it's just the thing for moulding curves . . . a special fastener for attaching tapered mouldings to automobiles. It fits a wide range of sizes, allows adjustment after assembly, saves time . . . and cuts costs, too. Yet, it's only one of hundreds of different moulding fasteners made by United-Carr for the nation's leading automobile manufacturers.

Other United-Carr designs for fasteners and allied products run into the thousands. Extensively used in the aviation, automotive, electronics and appliance industries, most of them are *tailor-made* to do a particular job for a particular manufacturer. But, whatever the fastening problem, where sound engineering and volume production are important, it pays to check first with United-Carr—FIRST IN FASTENERS.

• Before bidding on government contracts requiring snap fasteners or special fastening devices, consult your nearest United-Carr field engineer.

UNITED-CARR

United-Carr Fastener Corp., Cambridge 42, Mass.

MAKERS OF **POT** FASTENERS

BOOK REVIEW



WHITE-COLLAR MAN: In the new middle class, is he a fellow stood up by life?

Portrait of Mr. Nobody

The white-collar people just happened. They slipped into the modern world with a history that was blank of events. They face a future entirely of someone else's making. They are here, familiar, taken for granted, unnoticed.

Yet they have changed the whole concept of American society.

• **Hollow Men**—Or so C. Wright Mills would have you believe in "White Collar" (Oxford University Press, \$5). America is no longer a nation of go-getters, of captains of industry, of legendary horsetraders. To Mills, it is now a collection of little people "who have been stood up by life," of the "small

creature who is acted upon, but who does not act, who works along unnoticed in somebody's office or store, never talking loud, never talking back, never taking a stand."

In 100 years, says Mills, the U.S. has changed from a country of small capitalists—"their own men"—to a country of employees—"forever somebody else's man."

• **Without Makeup**—"White Collar" is a disturbing book. To a degree, it is also an unfair one. Mills, who is associate professor of sociology at Columbia University and a first-rank social scientist, has obviously sensationalized



Check-mated by cancelled checks?

IF RECONCILING cancelled checks means long hours and short tempers for your office staff, you may find yourself in a tight spot.

Payroll checks, dividend checks, checks for accounts payable, all checks and any checks have to be *double-checked* promptly and accurately.

That's why so many firms, in every kind of business, are making the smart move to McBee Keysort checks and "batch reconciliation." Keysort checks are easy to handle, easy to understand, provide greater accuracy, save up to 85% in operational time.

Any girl in your office can learn to reconcile checks the Keysort way in half an hour. Keysorting is less tedious than any other form of check reconciliation. And because Keysort is so flexible, the girls can

double up on the job without special training.

No matter what kind of checks you use now—printed and lithographed checks, safety paper checks of standard or special design, or pantograph checks—all are easily converted to the Keysort system. By adding pre-coded punched holes to each check, Keysort takes the dirty work out of reconciling. When notched, these marginal holes make it easy to sort both large and small volumes of checks in minutes—and make it easy to see that checks are filed correctly.

* * *

There are McBee offices in 80 U.S. cities. The McBee man near you will show you how Keysort can speed your check reconciliation. Ask him to drop in. Or write us.

THE McBEE COMPANY



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BYERS SNOW MELTING TURNS YOUR SIDEWALKS INTO SALESMEN

When snow starts falling this winter, plan to be among the growing number of snow melting users who have discovered that dry, hazard-free sidewalks pay-off handsomely in customer good will. You'll find that this thoughtful gesture on the *outside* is just as important as polite salesmen and quality merchandise on the *inside*! And, it eliminates a recurring maintenance chore!

Byers Wrought Iron pipe has long been the No. 1 choice for snow melting installations. Coils of this time-tried material, embedded in sidewalk or driveway, carry hot water that makes snow disappear as it falls. Genuine Wrought Iron is easy to weld, resists corrosion, and withstands damage during installation. Because it keeps serving when vulnerable materials fail, it's the dependable way to add sidewalks to your sales force.

This new bulletin covers the entire field of snow-melting... design, installation, operation... and explains why dependability demands the use of Byers Wrought Iron pipe. We'll be glad to send you a copy on request. Write A. M. Byers Co., Clark Bldg., Pittsburgh, Pa.



BYERS
WROUGHT IRON

his thesis—with help from Veblen and Marx. His picture of America at mid-century borders on caricature; the weaknesses of the society stand out, the strong points are obscured.

But despite this exaggeration there is a great deal of truth in the book. The picture may be an unflattering one, but that is partly because it is a picture of America without its makeup on. What Mills has to say is important to any businessman who is seriously concerned with where our society is drifting.

• **The Change**—In the early part of the 19th Century, probably four-fifths of the working population was self-employed. By 1870 the old middle class had shrunk to about one-third; by 1940 it was down to about one-fifth of the total.

Much of the loss of the old self-employed middle class became the gain of what Mills calls the new middle class—the white-collar people on salary. In 80 years white-collar workers increased by 1600%, more than six times as much as any other segment of the economy. The reason, Mills thinks, can be traced to three things: an overpowering jump in productivity through adoption of mass production; an even greater expansion of distribution; a specializing and routinizing of business operations.

• **The Members**—Who makes up this new middle class? Broadly, it is the people who deal with symbols and with other people, coordinating, recording, and distributing. Specifically, it is everyone on a salary—from the Charles E. Wilsons who run an industrial empire to the Willy Lomans who sell its wares.

It is the "bureaucrat" in the president's office, armed with "slide-rule and briefcase," the salaried doctor of the clinic, the junior partners of the "law factory," the "captive engineers" of the corporation. In the "great salesroom," it is the girl behind the counter and the adman who sells from a distance. It is the vice-president of sales, "the prima donnas who say that they are 'merely salesmen, although perhaps a little more creative than others.'" In the "enormous file of the office," it is the accountants and purchasing agents, the thousands of secretaries, stenographers, and clerks.

Everywhere, Mills sees people who are less independent, less the individual, than their U.S. forebears of 100 years ago.

• **The Managers**—There has been no managerial revolution, Mills says; the managers have never become a self-sustaining class with real power of its own. True, the managers of big business have replaced captains of industry as the ostensible central figures in modern history. "They are the high bosses,

the big money, the great say-so." But the owners are still on top.

All that has happened, Mills believes, is that the owners have redistributed their operating power. They have bureaucratized their entrepreneurial function. The managers have become the executors. Far from usurping the owner's function, they fulfill it with as much devotion as any owner could, or more.

• **Who Counts?**—From the standpoint of power, the top managers are the only ones that count. The foremen count only numerically, and the middle managers matter hardly at all, since what happens to them depends on what happens to those above and below them.

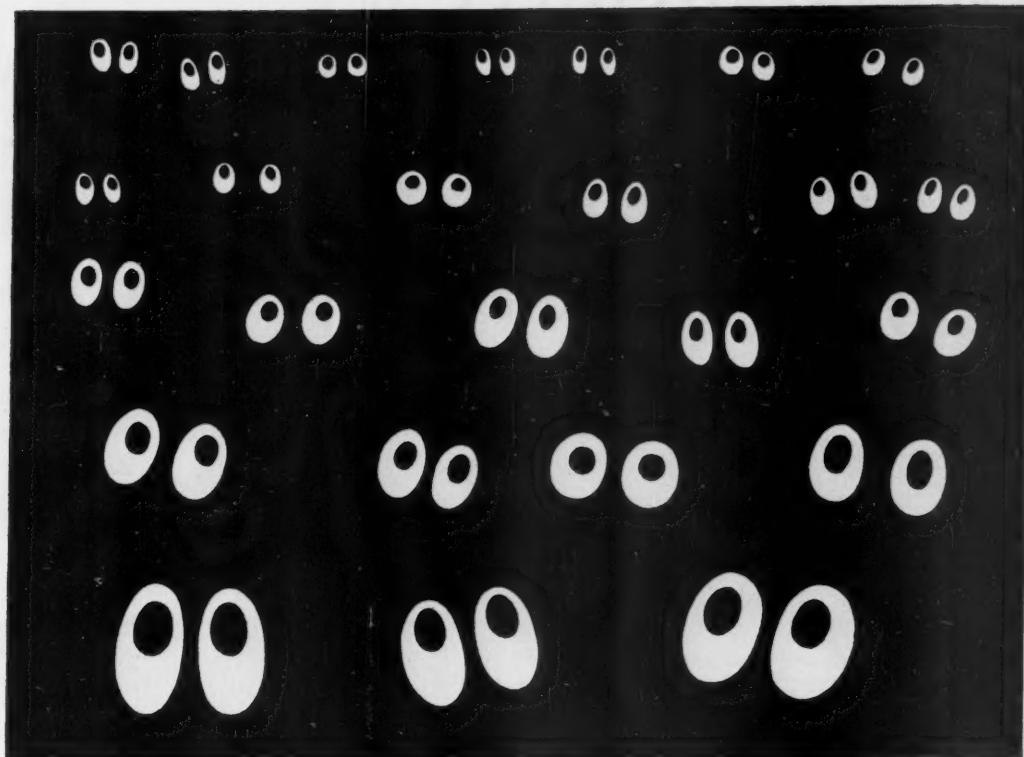
And what happens above? "Concentrate power, but enlarge your staff," Mills says. "Down the line, make them feel a part of what you are a part. Set up a school for managers, and manage what managers learn; open a channel of two-way communication: Commands go down, information comes up. Keep a firm grip, but don't boss them; boss their experience. And in all this be yourself and be human: Nod gravely to the girls in the office; say hello to the men; and always listen carefully to the ones above."

• **Types**—There are two standout types in and around the top, Mills finds: the bureaucrat, and what he calls the new entrepreneur.

The bureaucrat is the corporation executive who carefully follows the rules. He is calm, sober, and unhurried. "carefully protected from the world-to-be-impressed by subordinates and secretaries who are working around him." Liking the accoutrements of authority, he "is always in line with the aims of the employer or other higher up. Among all the apparatus, he sits cautiously, and after giving the appearance of weighty pondering usually says No."

The new entrepreneur represents the old go-getting competition in a new setting. He thrives best in the less tangible "business services"—commercial research and public relations, advertising, labor relations. His title is likely to be special assistant to the president. He serves him by "fixing things, between one big business and another, and between business as a whole and the public." And he gets ahead because "men in power do not expect that things can be done legitimately, and because they are often personally not very bright."

• **Message**—Mills throws many other barbs at white-collardom before he finishes his book—at its intellectuals, its sales people, its professionals. Beneath his bias and exaggeration, he is saying something serious: Modern man may be losing his freedom as an individual, and he doesn't seem to care. It is worth thinking about.



OPEN YOUR EYES *to the facts* on *Movie Advertising in Theatres*

Week after week, in nearly 15,000 theatres, 40 million movie-goers focus their eyes on the screen and forget the outside world. That's the kind of relaxed, attentive, receptive audience you can reach with Spot Movie Ads (Film Commercials) in theatres.

Your advertising message has more punch, more selling power in the movies where you can make full use of a sight-sound-action-color demonstration in commanding size. You can select special

markets for your Spot Movie Ads, even special neighborhoods on a completely selective theatre-by-theatre basis. You will find that the cost is extremely low.

Moreover, Spot Movies offer you splendid *selective* coverage in most TV areas. Spot Movies offer you a receptive weekly audience equal to almost one-fourth of the national population in areas which TV does not reach at all! Clip and mail the coupon now for more information.



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SMALL BUSINESS



LURING the customer is the merchant's first job. Bernie Simon, of Buffalo, looks with satisfaction at his modern storefront.



STOCKING every record issued is a policy of Simon.



SELLING is entrusted only to people who know and love music.

Making Music Sales Go Round and Round

Ten years ago Bernie Simon was running a hole-in-the-wall music shop in Buffalo as a sideline to his law practice. This week, no longer a lawyer, he opened the fourth of a chain of music stores that do a total business of \$2-million a year.

"I want to be Mr. Music of western New York," says Simon. "I want to be the guy who brings people of this area the music they want."

He's well on the way to the title. His four Music Houses—one in downtown Buffalo (pictures), two in the suburbs, and one in Niagara Falls—

blanket the area. He also leases the music shop of Sattlers department store in Buffalo. He is part-owner of a company that makes singing commercials; he directs a recording studio, writes popular songs, and is music columnist for local theater programs.

• **Formula**—For his success, Simon gives credit to a combination of luck and his love for music. Businessmen are more inclined to credit his selling technique:

• Carry a complete stock. "Nine out of 10 people who ask for the hit 'Come On-a My House' want the

Rosemary Clooney record," Simon says, "but the 10th one comes in and wants the record by William Saroyan, which most stores don't carry. We want to take care of the 10th person, too."

• Shave prices to the bone. Simon has done a roaring business in television sets bought in large quantities from distressed manufacturers and distributors and priced at lower than wholesale.

• Promote through simple, personalized messages to music lovers.

• As salespeople, hire only those "who like music, who like the store,

Let's go...let's get that SCRAP in!

All your SCRAP is urgently needed, NOW

THE scrap shortage is serious. Your scrap—every pound of iron and steel scrap you can locate in your plant or factory—is vitally needed and needed right away. For unless you do everything possible to get this scrap on its way to the mills, steel production is bound to slow up. That can't be allowed to happen. But without your help it surely will.

It takes at least one-half ton of scrap to make one ton of steel. With the mills turning out more than 2 million tons of steel per week, over 1400 carloads of industrial scrap are needed every day. And industry, somehow, must provide it.

What you can do to meet this emergency

First, organize a permanent Scrap Salvage Committee and make the "drive-for-scrap" part of your daily operations. Search out every possible source of scrap. Turn your old and worn-out equipment, tools and machinery over to your scrap dealer, at once. Dig out your discarded dies, rusted-out tanks and boilers, your old rails and other miscellaneous junk, and start them back to the mills through your scrap dealer. Encourage every employee to report every retired or obsolete machine that now stands idle—see that it is turned in for scrap.

By getting this "dormant" scrap off your premises and into the furnaces you'll be helping not only yourself but America as well. More scrap turned in, means more steel turned out—it's as simple as that. So let's get going.



You'll find your local scrap dealers listed in the yellow pages of the phone directory.



1-1329

This page would ordinarily be used to tell you about

U-S-S STAINLESS STEEL

but, because without SCRAP we cannot produce steel, we are asking instead for your all-out help in getting more SCRAP to the mills.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, FAIRFIELD, ALA. · UNITED STATES STEEL COMPANY, PITTSBURGH
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

**For the plant
you are planning
for tomorrow**



**it will pay you to
investigate now**

Cameron
NON-LUBRICATED

LIFT-PLUG VALVES

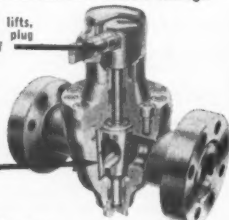
After six years of testing and service in the most difficult services, and under elevated temperatures, high pressures and vacuum, the Cameron Non-Lubricated Lift-Plug Valve has proved to be superior.

Featuring a renewable seat, which is separate from and not attached to the valve body, the Cameron Lift-Plug Valve offers a new approach to basic valve design, providing a tight seal and easy operation without the use of lubricants. The separate and renewable seat also makes for low maintenance and easy trimming for corrosive services.

Offered in ASA and API Pressure Ratings.

Plug Actuator lifts, turns, reseals plug in 3/4-turn of wrench.

Separate Renewable Seat.



Cameron IRON WORKS, INC.

P. O. BOX 1212, HOUSTON, TEXAS
Export: 74 Trinity Place, New York, N. Y. Represented in the sterling area by: British Oilfield Equipment Co., Ltd., Duke's Court, St. James's, London S.W.1, England



TELEVISION is "the greatest thing in many years," Simon believes. He inspects newly arrived set with Frank Perkinson, left, manager, and Robert Altman, comptroller.

and who like to sell music to other people."

• **No-Risk Inventory**—Simon considers a big inventory an essential in his business. It was largely his willingness to carry a complete stock that built his trade up from \$30,000 a year in 1941.

And it isn't so risky as it sounds; record companies allow dealers to return about 5% of shipments. Big inventory, he finds, increases his sales volume.

• **Building Sales**—Simon's Music Houses maintain four separate mailing lists, one each for customers with established preferences for classical, popular, hot jazz, or musical comedy records. Simon frequently follows up mailings with phone calls to special lists.

When local newspaper society columns report local people's visits to New York, Music House sends cards calling attention to new musical show albums that are in stock. Window displays are often tied in with current musicals in local movie houses.

Before the "South Pacific" album was released, Simon ran ads in Buffalo papers with an order coupon to build up advance sales. He sold 600 albums two weeks before the release date.

• **Sales Force in the Know**—Most important of all, Simon believes, is a musically inclined sales force.

"Music stores can do a great service in influencing the tastes of the public," he says. "Actually, a good music store clerk is a combination of music teacher and salesman. We have one girl who's terrific. A man walked in one day to buy a phonograph needle and walked out with \$300 worth of records. She has a fierce love for music and manages to impart that love to the prospective buyer."

• **Changing Tastes**—Simon finds industrial workers his best market. Popular

music leads in sales, but taste often shifts toward classical music. That's where Simon can cash in with his huge inventory.

"One of the most exciting things about this business is watching tastes change," he says. "A fellow starts buying pops, and the next thing you know he suddenly starts going for hot jazz—an entirely different thing."

"From there he moves on to things like Gershwin and then to semiclassical records, and eventually classical. We are gradually building up a taste for classical music. Radio is helping a lot, and, when a television starts showing more opera, that will help, too."

"The greatest record buyer," he adds, "is the man with a new record player. He goes on a spree for the first few months, spends a couple of hundred dollars, then tapers off. Then, too, we have collectors of all sorts. There's a fellow here who has 800 different Crosby records—that's more than Crosby has. And I know a woman with 92 different recorded versions of 'Stardust.'"

• **Law and Music**—Simon ran his first store in partnership with a musician brother. After his brother went to New York in the early 40's, he doubled for a few years as lawyer and storekeeper, then gave up law. In 1945 he bought a building on Delaware Avenue for a new store and also leased the record department at Sattlers.

He opened his first branch at the north end of the city in 1948, and this year opened his Niagara Falls branch and a store in the southern end of Buffalo. Bernie Simon has only one complaint about being a successful music retailer:

"Music used to be my hobby. Now I can't watch a musical or listen to a new record without wondering how it's going to sell."

Is there anything worse than being half a girl?

Yes, you might be her boss! She just loses half her time . . . you lose half the money you pay her. She can't do anything about it. You can—simply change your business forms.

Get rid of forms that need frequent re-setting . . . realigning . . . carbon stuffing . . . recopying. When a girl spends valuable productive time on things like this, she's only *half* a girl to you.

Get Uarco business forms and all this waste is out. No lag between one form and the next . . . they *feed* themselves into the machine. No carbon fumbling . . . carbons come pre-set. No needless recopying . . .

Uarco *combines* forms so that one serves everyone concerned. All work is productive work—no half-girls—*not one lost motion* from typing to distribution!

Yes, Uarco forms work for any business, any kind, any size. It's easy to *prove this to yourself!* Just call your Uarco Representative for a complete forms survey. No obligation, of course.

Factories: Chicago; Cleveland; Oakland;
Deep River, Connecticut; Watseka, Ill.
Sales Representatives in all principal cities.



UARCO
INCORPORATED

Business Forms



Send for these time and money saving forms

UARCO Incorporated
Room 1625, 141 West Jackson Boulevard
Chicago 4, Illinois

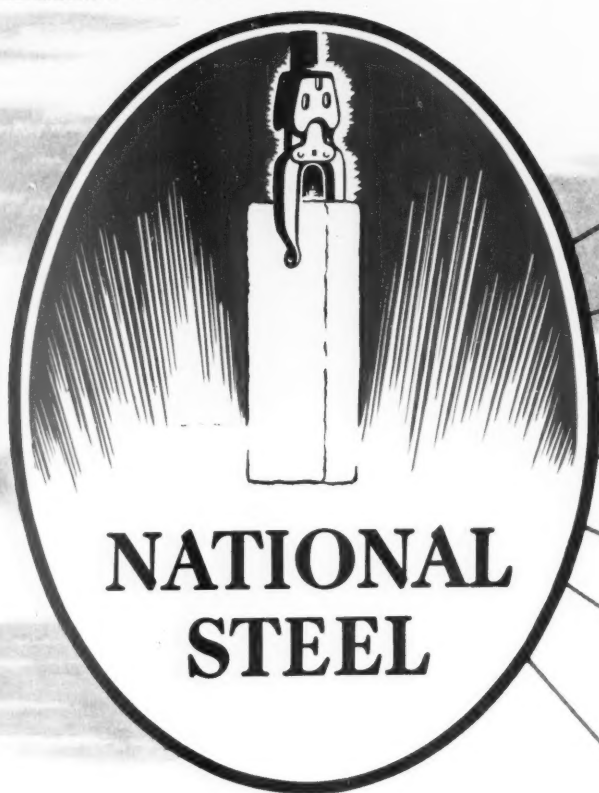
Please send me samples of Uarco business forms.

Name

Address

City State

This is National Steel



National Steel is a complete, self-contained steel producer. Its production starts in National Steel properties beneath the earth's surface. It ends with finished steel and specialized products that National Steel furnishes to the industries of America.

Within its structure, National Steel possesses every resource and every facility required for the transformation of ore into steel.

National Steel mines and quarries yield its raw materials. National Steel boats, barges and trucks transport its products. National Steel men and

furnaces, mills and machines, melt . . . roll . . . finish . . . distribute its steel.

And National Steel continues to expand, continues to implement its steel-making power. The completion of a new blast furnace, open hearth furnaces and other major facilities will increase its annual capacity from 4,750,000 to 6,000,000 tons of ingots by 1952. In addition, National recently purchased a site for a completely new mill on the East Coast.

This is National Steel . . . completely integrated, completely independent . . . one of America's largest and fastest growing producers of steel.

NATIONAL STEEL CORPORATION

GRANT BUILDING



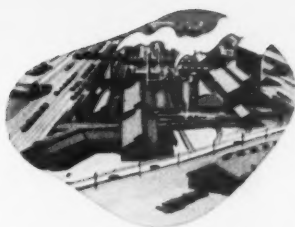
PITTSBURGH, PA.

SERVING AMERICA BY SERVING AMERICAN INDUSTRY



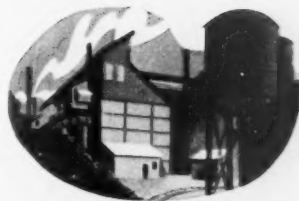
GREAT LAKES STEEL CORP.

Detroit, Michigan. The only integrated steel mill in the Detroit area. Produces a wide range of carbon steel products . . . is a major supplier of all types of steel for the automotive industry.



WEIRTON STEEL COMPANY

Mills at Weirton, West Virginia, and Steubenville, Ohio. World's largest independent manufacturer of tin plate. Producer of a wide range of other important steel products.



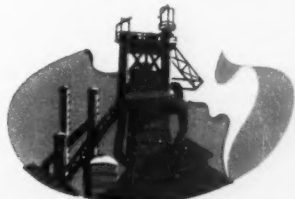
STRAN-STEEL DIVISION

Unit of Great Lakes Steel Corporation. Plants at Ecorse, Michigan, and Terre Haute, Indiana. Exclusive manufacturer of world-famed Quonset buildings and Stran-Steel nailable framing.



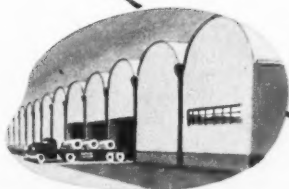
HANNA IRON ORE COMPANY

Cleveland, Ohio. Produces ore from extensive holdings in Great Lakes region. National Steel is also participating in the development of new Labrador-Quebec iron ore fields.



THE HANNA FURNACE CORP.

Blast furnace division of National Steel located in Buffalo, New York.



NATIONAL STEEL PRODUCTS CO.

Located in Houston, Texas. Recently erected warehouse covers 208,425 square feet. Provides modern facilities for distribution of National Steel products throughout Southwest.



NATIONAL MINES CORPORATION

Coal mines and properties in Pennsylvania, West Virginia and Kentucky. Supplies high grade metallurgical coal for the tremendous needs of National Steel.



Engineer Without Portfolio

When Mr. Beaver feels the urge to build, he just goes ahead . . . without assignment. Engineering and construction firms, on the other hand, must get the order before they start. And, leaders in the field rely heavily on the use of Business Week to sell their services.

REASON: Business Week is read by a highly concentrated audience of Management-men . . . executives who make or influence buying decisions for their firms. They have a voice in deciding who gets the building contract.

RESULT: Advertising dollars invested by engineering and construction firms in the pages of Business Week work harder, produce more. This explains why Business Week regularly carries the advertising of many of today's leading engineering firms. These advertisers know that—

YOU ADVERTISE IN BUSINESS WEEK WHEN
YOU WANT TO INFLUENCE MANAGEMENT-MEN

BUSINESS WEEK

330 WEST 42ND STREET, NEW YORK 18, N. Y.



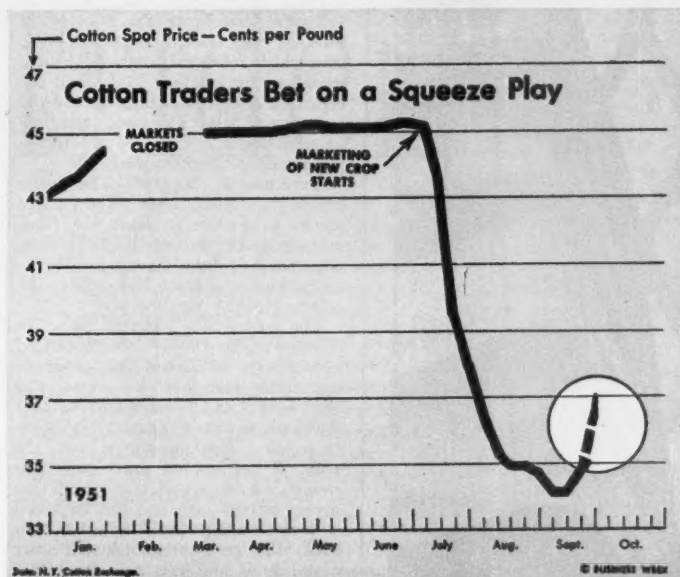
These Leading Engineering and Construction Firms Advertise in Business Week to Help Them Locate New, Profitable Markets

Badger, E. B., and Son
Bechtel Corporation
Blaw-Knox Company
Brown and Root, Incorporated
Ebasco Services, Inc.
Fruin-Colnon Contracting Co.
Fry, George S., and Associates
Gemar Associates
Girdler Corporation, The
Motor City Associates, Inc.
Stone and Webster Engineering Corporation
Turner Construction Company

Source: Publishers Information Bureau Analysis, 1950 and 1951

A MCGRAW-HILL PUBLICATION

COMMODITIES



THE UPSWING at the end of the price line is the sign of the paradox of . . .

More Cotton, Higher Prices

It's still harvest time for the third-largest crop in history. Yet prices have turned sharply upward. The explanation: Farmers are holding out for more money.

Cotton farmers, using government tools, are trying to pull off a coup that would make Jack's flier in bean growing look puny. They're trying to make the price of cotton go as high as the top of Jack's beanstalk, and with less visible support.

The way the growers are working it amounts pretty much to repealing the old economic law of supply and demand. Left to its own devices, this law would insist that cotton prices fall: A gigantic crop is being harvested. But a glance at the chart shows something else is happening.

That "something else" is a gimmick new to the cotton business, but old in other applications: the slowdown. Cotton farmers are taking advantage of government price-support loans to keep their harvest off the market. This tactic has stopped prices from finding their own level, has kept cotton crops under the farmers' control—for ultimate sale when prices go high enough.

• **Bumper Harvest**—Cotton farmers early in the year heeded the government's exhortation to plant a lot of cotton. With cotton selling around 45¢

a lb., it looked profitable, as well as patriotic, to plan for a big crop.

So the farmers planted cotton all over the landscape. The latest crop estimate put the 1951 harvest at 17.3-million bales—the third-largest in history, and 72% over the 1950 crop. It beats even the 16-million-bale goal suggested by Secretary of Agriculture Brannan.

• **Sale Prospects**—And what about demand for this crop? Domestic consumption of cotton last year—one of the biggest years—amounted to 10.5-million bales. Exports brought total disappearance to 14.8-million bales. Only three times has that much U.S. cotton been used. And all three times were more than 22 years ago.

So chances were that the U.S. wouldn't need more cotton than last year—if as much. There would surely be enough cotton to go around, even without the carryover from last year's crop. That carryover of 2.2-million bales was less than normal. Even so, it brought the total cotton supply to around 19.5-million bales.

Allow for a safe margin of carryover



Farmers are Midwest dealers' best customers. All but a handful of the 665 counties in the Midwest 8 states are predominately rural.

Dealers' Choice...

3 Out of 4 Say Midwest
Unit Farm Paper Ads
Produce Most Sales

● When asked, "In what farm publication will our advertising make the most sales for you?", 3 out of 4 Midwest dealers named Midwest Unit Farm Papers.*

Your Midwest dealers know their farm customers depend upon the local farm paper more than any other publication for helpful information. Obviously, therefore, they prefer to see advertisements of products they sell—of your products—in the local farm paper.

Let the five Midwest Unit Farm Papers present your products against a background of intensely localized farm information. In the world's richest farm market, more people live on farms than in the Midwest's 39 largest cities (excluding Chicago). Buy the Unit—a single insertion order, a single plate and a Unit discount on rates.

*Ask your Midwest dealers this question. You make the survey. The Midwest Unit will repay you any out-of-pocket costs.

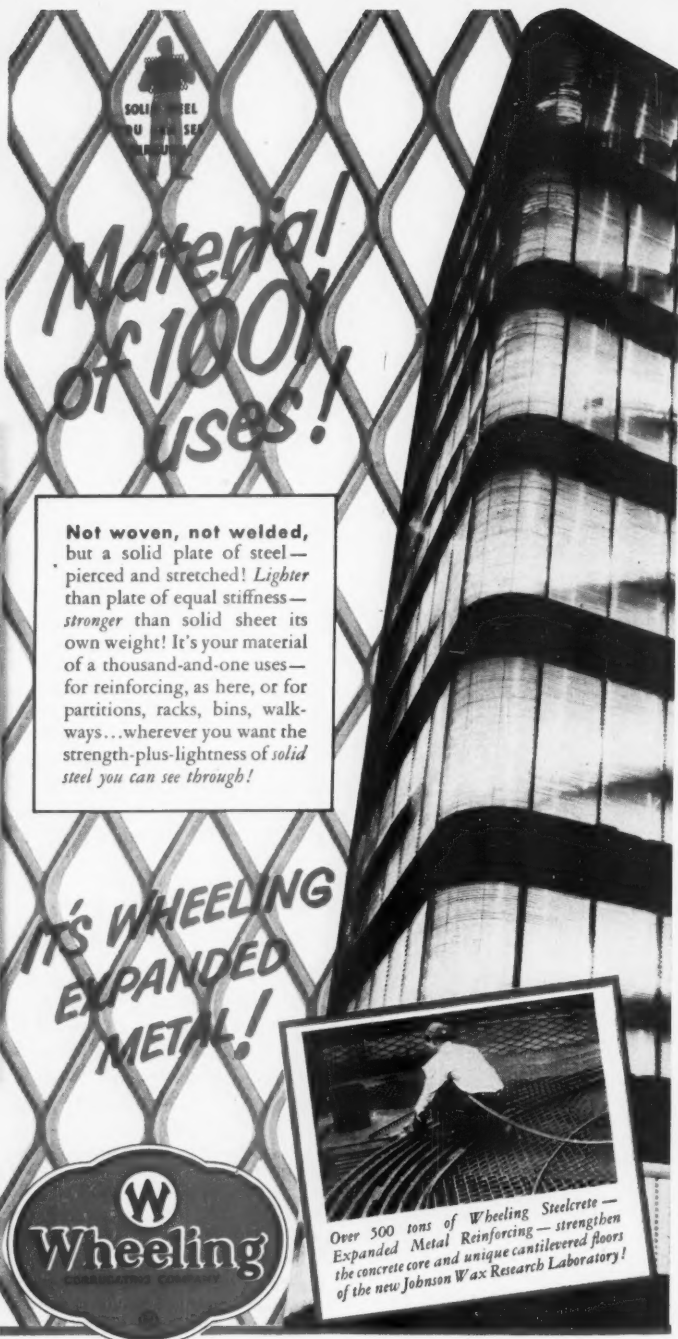
MIDWEST Farm Paper UNIT

The Farmer (Minnesota and the Dakotas)
Wallaces' Farmer and Iowa Homestead
Wisconsin Agriculturist and Farmer
Nebraska Farmer
Prairie Farmer (Illinois and Indiana)

CALL YOUR LOCAL MIDWEST REPRESENTATIVE

MIDWEST OFFICES AT:

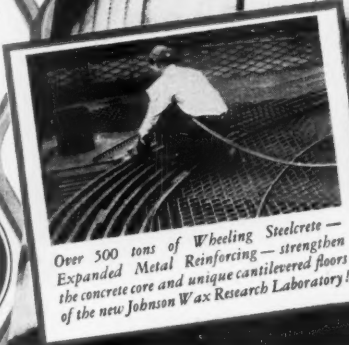
250 Park Avenue, New York . . . 50 East Madison Street,
Chicago . . . 542 New Center Building, Detroit . . . Russ Building,
San Francisco . . . 1324 Wilshire Boulevard, Los Angeles.



**Material
of 1001
uses!**

Not woven, not welded,
but a solid plate of steel—
pierced and stretched! *Lighter*
than plate of equal stiffness—
stronger than solid sheet its
own weight! It's your material
of a thousand-and-one uses—
for reinforcing, as here, or for
partitions, racks, bins, walk-
ways...wherever you want the
strength-plus-lightness of solid
steel you can see through!

**IT'S WHEELING
EXPANDED
METAL!**



Over 500 tons of Wheeling Steelcrete—
Expanded Metal Reinforcing—strengthen
the concrete core and unique cantilevered floors
of the new Johnson Wax Research Laboratory!

WHEELING CORRUGATING COMPANY

WHEELING, WEST VIRGINIA

- | | | | | | | |
|-----------------------|-----------------------|------------------------|---------------------|--------------------------|---------------------|--------------------------|
| Atlanta
Louisville | Boston
Minneapolis | Buffalo
New Orleans | Chicago
New York | Columbus
Philadelphia | Detroit
Richmond | Kansas City
St. Louis |
|-----------------------|-----------------------|------------------------|---------------------|--------------------------|---------------------|--------------------------|

for next year, to guard against 1952 crop failures, and you still have more cotton in sight than we are ever likely to need.

That's what broke the price when the new crop started to market. The price had remained high till then, thanks to the smallish 1950 crop, the high rate of mill consumption, and the large export sale. But from early July to mid-August, 1951, cotton marketers chopped the price about 10¢.

• **Government Support**—The price couldn't go much lower. The government's price floor is about 32¢. But, judging by the size of the 1951 crop, you wouldn't have expected it to go much higher either. Then came the cotton growers' squeeze play.

The government supports prices in cotton largely through a guaranteed loan system. At harvest time, a farmer can either take his chances on the open market or borrow against his crop at the support price of about 32¢ (90% of parity). This guarantees him 32¢ a lb. If the market price goes high enough, he can repossess his cotton by paying off the loan and can then sell it in the market. Or if he leaves it in hock, the government takes it over next July 31 and sells it in the future for not less than 32¢ a lb. The farmer still gets any excess over the 32¢ a lb.

• **In Unison**—There are so many cotton farmers all over the country that they don't usually act simultaneously in putting their crop under loan. This time it's different. An organized drive, including a large group of congressmen from cotton states, has encouraged farmers to take this step. Although the government is holding prices down with one hand, the Agriculture Dept. joined in suggesting that farmers hold out for better prices.

If enough cotton moves into loan—and stays there—the market can be kept tight. The effect is exactly the same as if there isn't enough cotton to fill the demand.

• **Statistics Lag**—Figures on loans reported by the Commodity Credit Corp. don't tell the story yet. Up to Sept. 20, CCC reported only 175,000 bales on loan, while ginnings of the 1951 crop ran to 3.7-million bales through Sept. 16. But some experts figure that the total on loan was really around 750,000 bales.

A farmer risks little in putting cotton on government loan. It costs him about one-fourth of a cent a lb. to put it on loan and about one-fifth of a cent per month to keep up the loan. The price rise in spring usually more than makes up these costs. The only risk is when the price gets well over the support level. Then the man who leaves his cotton on loan risks the chance that the price may drop before he can cash in at the higher level.

Friden

The Thinking

Machine of

American Business

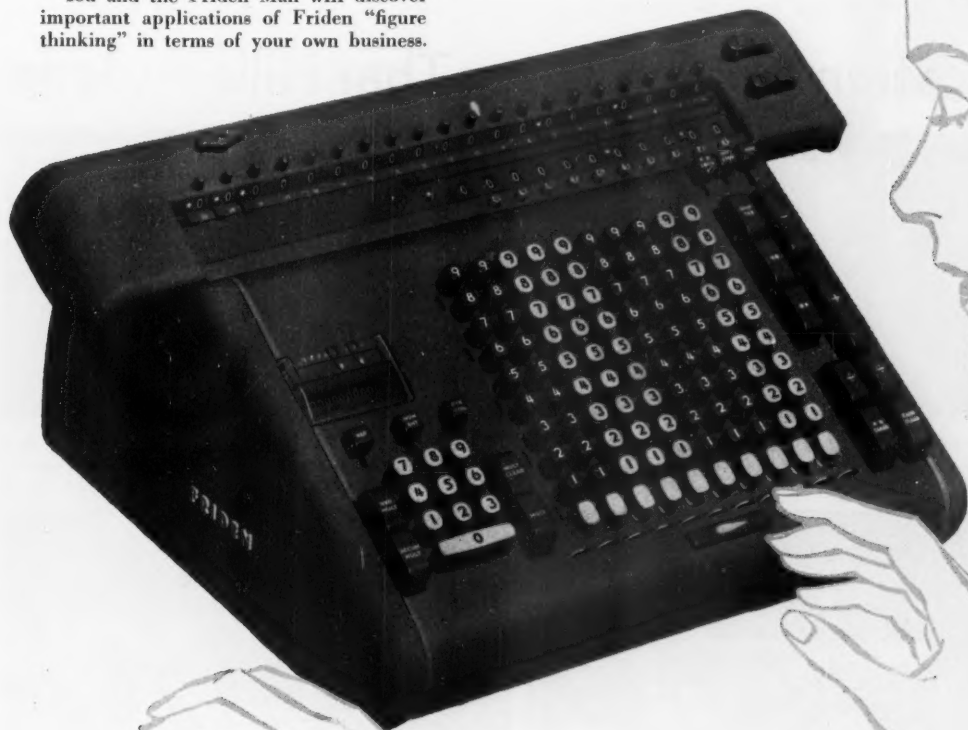
EXCLUSIVE features enable the Friden to perform more steps in figure-work without operator decisions than any other calculating machine ever developed.

To business firms and industrial plants—large or small, and no matter how specialized—Friden brings amazing short cuts in payroll calculations, invoicing, percentages, discounts. It speeds the figuring of taxes, interest, inventory, engineering . . . statistical work of every kind. *You have to see it to believe it!*

You and the Friden Man will discover important applications of Friden "figure thinking" in terms of your own business.

The Friden Automatic Calculator "thinks"
its way through figure problems

—to proved answers—with uncanny speed



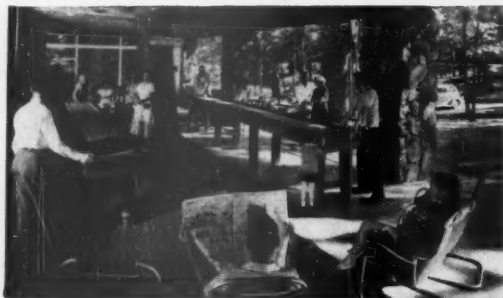
● *Figure on a Friden*—phone or write the Friden Man near you. Friden sales, instruction and service available throughout the U.S. and the world.
FRIDEN CALCULATING MACHINE CO., Inc., San Leandro, California

VACATIONS



WIDE OPEN SPACES were comfortably populated at the Sonoma Mission Inn. Concessionnaires found there was . . .

Vacation Gold in Them Thar Hills (Story on P. 118)



CALIFORNIA resort owners had feared their recreation halls and bars would be deserted in favor of the sportier gambling



casinos and slot-machine arcades of neighboring Nevada. But their own state's ban on gambling didn't hurt them as they'd expected.



SIERRA NIGHTLIFE went prosperously along in its own outdoors fashion, with hot jazz concerts (left) and campfire sessions



(right). Resort owners found family groups predominant among their expanded clientele. Vacationists spent money cautiously.



They did

When this cotton manufacturer* searched for ways to produce more, he used a system that will profit every executive who wants to improve production. He saw a critical area that robbed his plant of finished products; his electrical distribution system. Every electrical storm broke down his system. The entire plant was shut down for hours.

what

So he asked Westinghouse engineers for the help we offer everyone... he asked for a method, a scheme to solve his problems, not a quotation on devices. His staff and ours worked out a distribution method using many devices—switchgear, panelboards, power centers, transformers—to meet his problems. Results: he cut power costs \$12,000 a year; his system restricts any one electrical fault to only 5% of the mill.

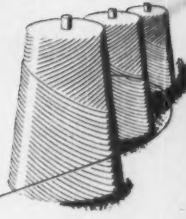
you can do

His story is significant for any industry, any manufacturing process. It says you use capacity thinking to solve capacity problems. We want to do this kind of thinking with you or your engineers about your problems.

to produce more

You can choose the devices later. It's how you put them together that counts — whether air conditioning, lamps, electronic tubes, elevators or stokers. Many manufacturers make good electrical devices. Westinghouse, in fact, makes a broader line than anyone else. But the priceless ingredient Westinghouse offers you, in addition, is the skill of broadly experienced engineers in putting together the right combination of good devices to let you produce more with what you have. Westinghouse Electric Corporation, Pittsburgh, Pennsylvania.

*name on request



YOU CAN BE SURE...IF IT'S
Westinghouse



MERCURY AUTOMATIC CLUTCH

The Mercury Automatic Clutch is a Revolutionary Application of a Basic Mechanical Principle

THE CASE OF THE STYMIED SALES MANAGER

❑ Sales were slipping in a seller's market. His principal competitor seemed to be landing nearer the pin in half a dozen of his best territories.

❑ Then he found out that his P. C.* had an extra talking point . . . a Mercury Automatic Clutch to make starting easier . . . operation of his product surer and safer.

❑ A Mercury Automatic Clutch permits an electric motor to reach an efficient speed before any load is applied to it. It then accelerates the load from a standstill to operating speed smoothly, utilizing the maximum torque of the motor. Overloads cannot stall it or slow it down below its efficient speed.

❑ On a gasoline engine a Mercury Automatic Clutch prevents stalling and possible damage to the engine or transmission parts. It permits idling at all times.

❑ Find out today if the addition of a Mercury Automatic Clutch to your product would make selling easier for you and your dealers. Write for Mercury Catalog BW-28.

*Principal Competitor . . . Everyone has one.

MERCURY CLUTCH DIVISION
AUTOMATIC STEEL PRODUCTS, INC.
EANTON, OHIO



OTHER AUTOMATIC PRODUCTS

Cleveland Tapping Machines
Specialty Grinding Wheels
Automobile Water Pumps
Portable Automobile Lifts
Automobile Jacks
Automobile Pulleys



REDWOOD LAND drew up to 30% more customers than in previous vacation seasons.

"... California resort cash registers rang a merry tune this vacation season . . ."

RESORT pictures start on p. 116

The business dip that set retailers to crying the blues this summer never touched California's vacation resorts. Their 1951 season was a bonanza. While San Francisco department stores mourned a sales drop of 18% in July and 4% in August, cash registers out under the redwood trees were ringing up a take 20% above 1950.

• **Pleasure vs. Goods**—It adds up to another small sign that consumers aren't really girding for more inflation and shortages. In California they were readier to part with hard cash for pleasure than for goods.

Resort business, in fact, was generally good in the whole country this year. Florida's summer resort trade rose again, as it has every year since the war. This gain comes partly from packaged, all-expense vacation offers, partly from the lure of lower prices in hotels and motels. But the rest of the East did only about as well as last year.

• **Above Average**—California clearly topped the national average. One reason: There's less competition for the tourist dollar from foreign travel than in the East. Another reason: Californians are highly motorized.

Some California resorts swelled their income by as much as 30%. One of these is the Sonoma Mission Inn (pictures, page 116), in the Valley of the Moon, Lake County. Its proprietor, George Hoberg, said it was the biggest gain in the resort's history, dating back to 1885.

For the fifth year in a row, vacation facilities at Yosemite National Park were practically a sellout.

• **Pleasant Surprise**—The good season came as a surprise. When retail sales

Reduce warehousing costs.

TWA

COAST-to-COAST

4-engine all-cargo

"Sky Merchant" service every night!*

Ship almost anything almost anywhere. Your best markets are only hours away. Call TWA today for rates, schedules, quick pick-up.

*Except Saturday & Sunday

All TWA flights carry
— Air Mail and Air Cargo

TWA
TRANS WORLD AIRLINES
U.S.A. • EUROPE • AFRICA • ASIA

began to slump late last spring, vacation merchants prepared for leaner pickings. Consumers were said to be on a savings jag. And in California, some resort owners felt doubly jinxed because the legislature had tolled the final knell for slot machines. California resort owners had expected many holiday seekers to drive over the state line to Nevada.

Resort operators, like Hoberg, and the big outfits at the lower end of Lake Tahoe prepared against the expected dropoff. They promoted convention business, but cut down on general promotion, both direct mail and newspaper advertising. The smaller resorts simply cut down all around in promotion and equipment and got ready for a disappointing season.

Shortly after July 1, however, vacationists began pouring in. And Labor Day didn't end the stream; weekends at popular resorts are still a sellout. More out-of-state tourists went to California than ever before, and more Californians took to the road.

• **Cost-Conscious**—It was, by and large, a price-conscious crowd. People inquired in detail about what their dollars bought in the way of food and entertainment. It was the grocery, rather than the bar, that they patronized. It was not a big-spending clientele. But its numbers were so much greater than the freer-spending crowds of the past five years that it totaled up a record high in business.

Now that the figures on the season are in, analyzers and dopesters are busy figuring out why people who had stopped buying nylons and rugs were willing to spend cash for a good time. Managing director John J. Cuddy of Californians, Inc., a nonprofit promotion agency for California tourist business, thinks one big factor this summer was a relaxed spirit throughout the nation. People were not worrying so much about either national or international troubles.

But one man's meat is another's poison. One resort sales manager saw it this way: "People were so tense about the state of the world that more of them stayed close to home for their vacations."

• **Behind the Spree**—Economists of the San Francisco Federal Reserve Bank and the State Chamber of Commerce say that people who had their fling in the scare buying last summer felt that goods were too high-priced this year. So they spent their money on a good time.

Peck-Judah, one of the state's largest travel agencies, says that year by year a vacation has been taking on more importance in family budgets. Special vacation savings funds are popular. And even borrowing for a vacation is not infrequent.



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All shipping containers of corrugated or solid fibre look very much alike before they're shipped. The appearance and condition of the merchandise when it reaches the final destination tell the story of true packaging economy.

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Write for Catalog No. 217 showing "Shaw-Box" Full Electric Traveling Cranes from 5 tons capacity up; Catalog No. 218 for 'Load Lifter' Cranes from 1 to 25 tons.



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Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments.



READERS REPORT

Covered Bridges

Gentlemen:

You did a fine job of telling the truth about covered bridges and the building of new ones [BW—Sep. 8 '51, p74]. As a covered bridge hobbyist I am always grateful to see an article of this nature appear, because so many people are misled by the "folklore" about them.

In case any of your readers would like to cross it, I should like to point out that the covered bridge across the Connecticut River between Cornish, N. H., and Windsor, Vt., is no longer a toll bridge. Also, the bridge (shown on page 74) at Rider's Mills, N. Y., was destroyed by a flash flood in July, 1945. It was hoped it would be replaced in kind, but to date nothing has been done.

RICHARD S. ALLEN

CHAIRMAN,
NEW YORK STATE HISTORICAL ASSOCIATION
SITE COMMITTEE,
ROUND LAKE, N. Y.

The Beam in Our Eye

Gentlemen:

Your article "Concrete Beams Can Take It" [BW—Aug. 25 '51, p52] contains a statement that is categorically incorrect. You say: "There's just one hitch: Prestressed concrete is more expensive than structural steel, because the beams have to be poured right at the construction site."

The particular prestressed concrete beams being tested by the Austin Company may or may not have had to be cast "right at the construction site" due to their great length. However, one of the particularly outstanding merits of the application of prestressing to concrete is that it considerably enhances the possibility for centralized precasting of standard beams, columns, and slab sections well remote from the site of construction with concomitant possibilities for major economies. It is well within the capacity of the American transportation system to transport beams 60 ft. in length, such as those manufactured and tested by the Austin Company so even these might have been cast remotely from the point of testing.

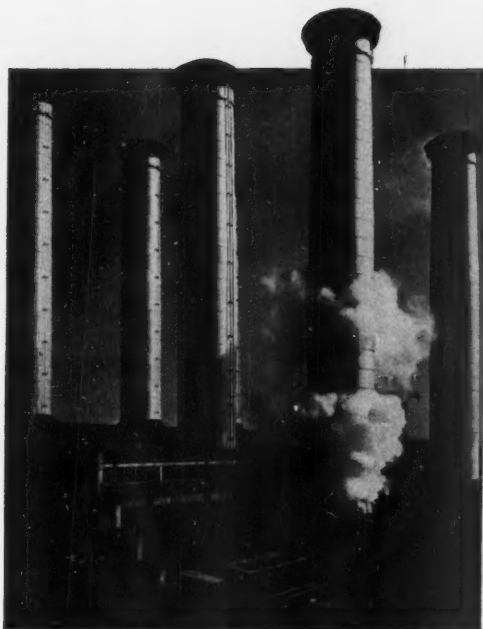
C. E. WUERPEL

TECHNICAL DIRECTOR,
MARQUETTE CEMENT MFG. CO.,
CHICAGO, ILL.

Sirs:

With reference to your article on concrete beams:

These particular beams were designed by the Freyssinet Company and were



POWER . . . MADE WITH BRICK

• Wherever there's a smokestack there's a job for refractory brick. It's the job of containing heat . . . heat that turns metals into seething liquid.

Refractories line furnaces. Furnaces that produce the steam to drive generators; furnaces that torture ores and scrap and turn them into gleaming steel; into copper, aluminum, zinc and other metals; furnaces that produce glass and coke and chemicals; furnaces that make possible modern industry.

Next to agriculture, refractories are the most important product affecting your daily life. Their employment is infinite in its variety, and their creation for these various uses requires the most skillful research in the chemical and physical sciences.

To meet these stringent technical demands—after all, when you're dealing with temperatures of 3000 degrees and higher, you can't afford to guess, you have to know.—General Refractories Company maintains the world's most modern and complete refractories research laboratory, staffed by men of international repute. They are qualified to prescribe refractories for any need, and General Refractories is equipped to make them with a complete refractories service.

GENERAL REFRACTORIES COMPANY

PHILADELPHIA



WATER COOLERS

Feature-packed for Sanitary Refreshing Cool Water



SANITARY TOP—The lustrous, gleaming top is easy to keep clean. Scientifically designed to prevent spillage. No crevices or corners to collect bacteria.



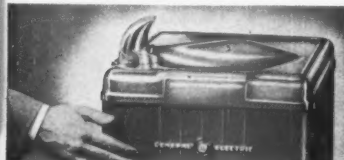
ANGLE STREAM, NON-SQUIRT BUBBLER—Stream angled to avoid water dripping back on nozzle from lips. Guard shaped to prevent contact of lips with nozzle.



COLD WATER RESERVOIR—Protects purity of water, does not give water metallic taste. Connection at rear of cooler for use when remote bubbler is desired.



SEALED REFRIGERATION SYSTEM—Efficient, dependable. Tamperproof and trouble-free. Double wall protection between refrigerant and drinking water.



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SURE-TREAD FOOT PEDAL CONTROL—Avoids transfer of germs from user's hands to bubbler. Permits drinking when hands are full. Located to prevent toe scuffing.



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constructed by the Austin Company, under our supervision, according to Freyssinet methods, which are easily identifiable by the anchorage cones at the extremity of the beams as shown in the photographs accompanying your article.

We suggest that your readers bear in mind that only erroneous conclusions can be drawn from a comparative cost analysis of structural steel versus prestressed concrete if the purpose of the structure, and therefore the design specifications, is not clearly stated. For example, in considering an industrial building, one should ask: What are the column spacings desired? How many columns and beams can be repeated in the same dimensions? What can be the amortization of form-work for pre-casting? What are the design loads? Is the building to be fireproof? These are just a few of the considerations to examine before determining the comparative cost of structural steel versus prestressed concrete.

R. M. DUBOIS

PRESIDENT,
FREYSSINET COMPANY, INC.,
NEW YORK CITY

Finland's Status

Dear Sirs:

What's the meaning of labeling Finland a satellite nation in your color map of Russia [BW—Aug. 18 '51, p. 22]. BUSINESS WEEK certainly ought to know the facts on Finland and its dangerous position next to Russia. If not, I suggest you get the correct slant as soon as possible.

JALMER M. LAIHO

SKOKIE, ILL.

• BUSINESS WEEK's mapmakers made the mistake of assuming that Finland's geographic and economic ties with the Soviet Union constituted satellitship. Herewith they apologize.

Initially Puzzled

Sirs:

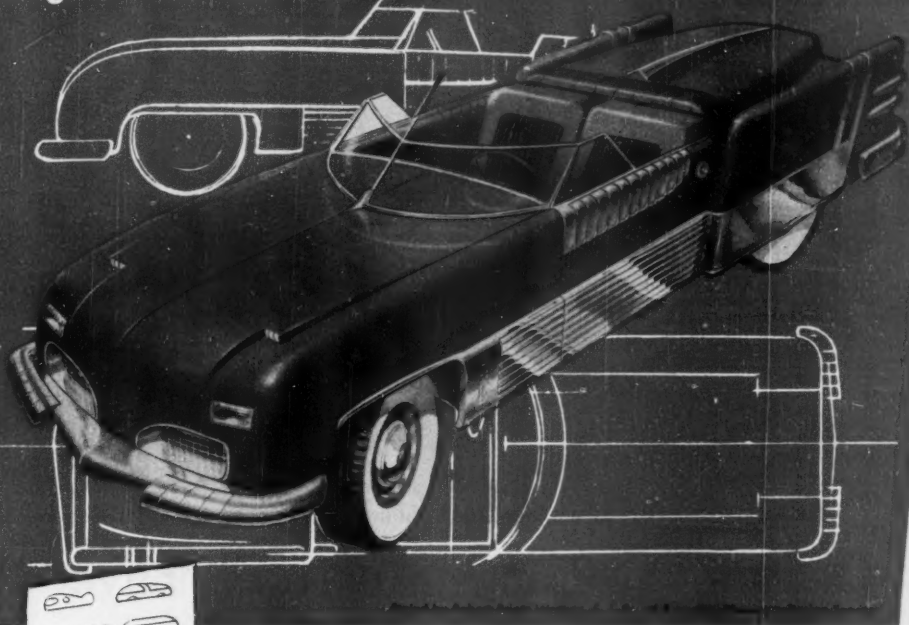
In your August 25 issue, there are mentioned NPA, MRO, DPA, CCC, ECA, and RFC. Some of these are known to the writer, and some are not. May I respectfully suggest that either at the beginning or at the end of an article, or somewhere in the magazine, a list of the names represented by initials be printed for easier understanding.

WILLIAM STEIN

NEW YORK CITY

• BUSINESS WEEK's general policy is to give the full name of an organization when first mentioned and to use initials thereafter. But in this alphabetical era, we feel some outfits are better known by their initials.

Design for the Future ...



To the Executive Planning for TOMORROW...

Here's a forecast of your new automobile for the 1960's. Leading automotive manufacturers have just such advance models *now*... designs that are virtually all aluminum and other light alloys. Even the more powerful engines will be constructed of lightweight metals. And just as *today's* models include the features from forecast designs of a decade ago, ideas from present advance models will be used in *tomorrow's* production.

Profit from the "future-thinking" automotive engineer... put aluminum on your drawing boards for *tomorrow's* designs. Supplies of bauxite ore are ample for generations and this, together with expanding aluminum production facilities assures a steadily mounting supply of *tomorrow's* main metal... at a consistently low price.

Reynolds Aluminum Specialists are now working with many companies on their future designs. They will be glad to work with your designers to assure

you of the maximum benefits of aluminum—low cost, lightweight with strength, natural attractiveness, wide range of finishes, freedom from destructive rust, ease of fabrication.

Today, call the Reynolds office listed under "Aluminum" in your classified telephone directory. Or, write to Reynolds Metals Company, 2585 South Third Street, Louisville 1, Kentucky.

and to the Man in Charge of TODAY'S PRODUCTION!

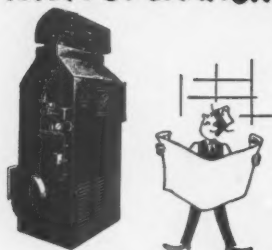
Do you have a defense contract that specifies aluminum? To eliminate production problems, acquaint yourself with the accepted production techniques for fabricating aluminum. Write for complete list of Reynolds technical books covering every phase of fabrication. And for special problems, take advantage of Reynolds trained staff of aluminum specialists.



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**FOR PRODUCTION MANAGERS
WHO WANT
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Dravo Counterflo direct-fired Heaters, ideal for heating large open spaces in commercial and industrial plants, are easily adapted for process curing and drying, too!

These versatile heaters give you many advantages:

- **automatic controls**—on-off or modulating require little attention.
- **quick warm-up**—heat is produced instantly "on the spot", delivered where needed.
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"In our process business, drying is one of the top problems. The Dravo Heater was installed in combination with our existing equipment. The heater, supplementing our original equipment, has cut drying time in half, which, in effect, means that we have doubled our production."



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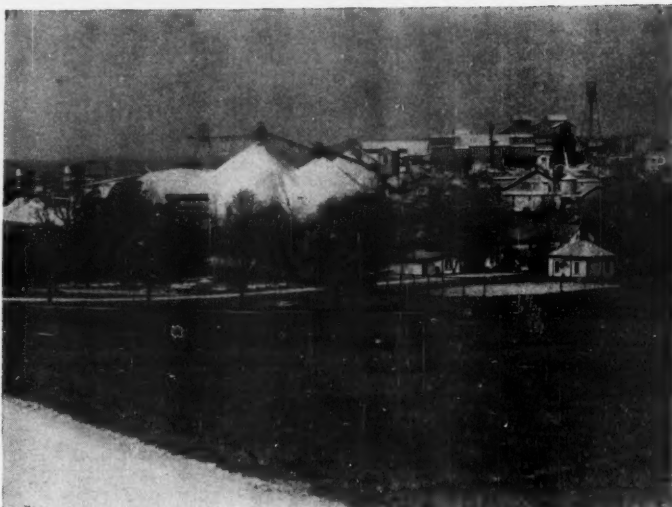
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COMPANIES



ONE ORE SOURCE for American Zinc is its Mascot (Tenn.) mine.

Zinc Maker Turns Buyer

Hard-working Howard I. Young, president of American Zinc, Lead & Smelting Co., goes to Washington again. Now he'll help Jess Larson stir up metals and minerals expansion.

Jess Larson, a lawyer by trade, stepped into new territory when he took over the job of administering the newly formed Defense Materials Procurement Agency (BW-Aug. 11 '51, p134). Through DMPA, his job is to watch over the defense stockpile of strategic materials and, at the same time, to aid industry in expanding facilities for mining scarce minerals.

For the second part of his job, Larson needed the help of a man with a lot of mining and smelting experience. A few weeks ago, he got the man: Howard I. Young, 62-year-old board chairman, president, and general manager of American Zinc, Lead & Smelting Co. in St. Louis (cover).

• **A Miner's Miner**—Industry liked Young's appointment as Larson's deputy administrator. In the nonferrous metals field, particularly, Young has long been active as industry's spokesman before congressional committees and government agencies. During World War II, he was deputy vice-chairman of WPB in charge of metals and minerals. He has also been president since 1934 (longer than any other man) of the American Mining Congress, which represents all mining—coal, metals, and nonmetals. And he was

president of the American Zinc Institute from 1934 to 1949.

Once he gets through the house-keeping details of organizing an office and assembling a staff, Young will be able to turn full attention to the main job—of encouraging industry to turn out more metals and minerals. He thinks now that he can get that job going in about six months. Then he would like to turn the job over to someone else and go back to St. Louis and American Zinc.

In the meantime, Young will run his company, as he did during World War II, as a sort of presidency by mail and telephone. From his room in Washington's Mayflower Hotel (where he again resides), Young kept 14 mines, smelters, and quarries running full-blast and still was able to devote full working days to his job at WPB.

• **Old Hand at the Job**—Young is a seasoned hand at procuring scarce materials; that has been one of his main jobs for the past 21 years as president of American Zinc. Unlike its biggest competitors, American Zinc depends to a large extent on outside supplies of zinc concentrates; its own mines produce only about a fifth of its needs. So the company is always on the watch

new book explains

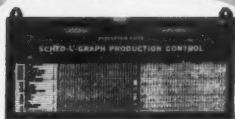
Practical Production Control

Most of your manufacturing problems today can be summed up in two words — *materials* and *production*.

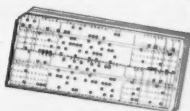
The answer to these problems lies in simplified and proved paper work systems. That's why we know our new book, "Production Control Systems and Procedures," can be a standard guide to material and production planning and control in your plant, whether it is large or small.

This book outlines actual case histories based on the vast combined experience of practical men who solved the complex production control problems of a regulated economy. These men now bring you, free, their analysis of simplified means for coordinating men, materials, and machines.

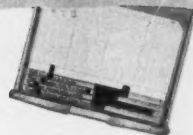
**Here are a few of the practical ideas
you will find in this book . . .**



. . . How to keep up maximum output, curb costly production delays — by using SCHED-U-GRAPH CHART BOARDS to set up long-range, flexible production schedules, and to provide positive control of machine loads and parts needed for assembly-line operations.



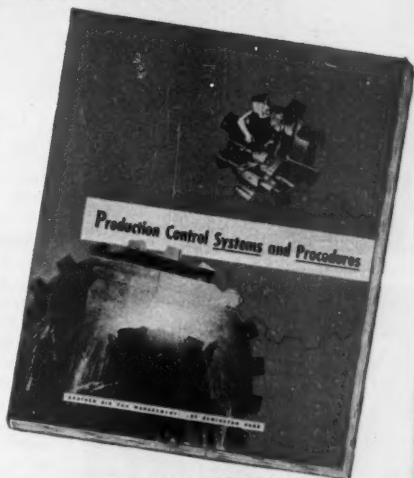
. . . How to detail advance requirements of parts and raw materials for effective procurement action — with PUNCHED-CARD TABULATION SYSTEMS that "explode" bills of materials mechanically, quickly; and also provide the facts needed to prepare CMP allotment applications.



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"Production Control Systems and Procedures", Form No. X1268, will show you how these proved ideas can help solve your production control problems. For your free copy, phone our nearest Business Equipment Center. Or write to Room 1376 Management Controls Reference Library, Remington Rand Inc., 315 Fourth Avenue, New York 10, N.Y.

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**THE WHELAND
COMPANY**
CHATTANOOGA 2, TENN.

Yield Large Returns
... ON A SMALL
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"Roll-or-Wheel" Conveyors

For a surprisingly small cost you can mechanize the handling of your product by installing, easy-to-set-up, low-cost, portable BUSCHMAN "Roll-or-Wheel" Conveyors.

Available in 10 ft. and 5 ft. straight sections, curves, adjustable stands, 3-way switches and other accessories. Can be moved and reset in a matter of moments. Write for bulletin #15 today.

THE E. W. BUSCHMAN CO., INC.
4477 Clifton Ave.
Cincinnati 32, Ohio



"... 'you will tend to keep your fingers in a little bit of everything' ..."

AMERICAN ZINC begins on p. 124

for new sources, particularly now when demand for zinc is high and supplies are short.

A few months ago, American Zinc took an important step forward in this competitive struggle for ore. Young negotiated one of the largest contracts for zinc concentrates ever made. It was with Barvue Mines in Quebec, a subsidiary of Golden Manitou Mines, Ltd.

The contract, which may run for 10 to 15 years, calls for American Zinc to buy 175,000 short tons of concentrates at a firm price based on 17½¢ a lb. for prime western zinc slab—the present frozen price for zinc. The contract also gives American Zinc an option on 175,000 more tons at the same price, but with an escalator clause to cover possible cost increases.

This week Young announced purchase of the Nellie B. Mining Co., second-largest producer of zinc-lead concentrates in the tristate district (Missouri, Kansas, Oklahoma). Young said the mining company, whose three concentrating mills treat between 3,000 and 4,000 tons of zinc-lead ores daily, will supply about 12% of American Zinc's concentrate requirements.

• **Green Thumb**—Both of these arrangements are typical of the kind of aggressive planning that Young has used to build his company up from its standing as 18th in the industry when he took over as president to fourth today.

In 1930 American Zinc's net sales were only \$6,638,254. The price of zinc had declined below 3¢ a lb. The company's ore reserves didn't look good. There was talk of liquidating. Last year net sales reached \$62,511,857.

The organization chart at American Zinc makes it clear that credit for the company's enormous growth during this period goes mainly to president Young; there is no one else at, or near, the top of the pyramid. Young is board chairman, president, and general manager. He was the company's last vice-president in charge of operations before he was made president. Under Young, responsibility is delegated to vice-presidents (one of whom is his eldest son, Richard) and managers located at the mines and refineries. On important matters, they all report directly to Young.

• **Detail Man**—Most presidents don't want to be bothered with details about individual plants. Young insists on it. Until a few years ago, Young had been

in every working drift in each company mine. "When you grow up in a company and you thoroughly enjoy the work," says Young, "you will tend to keep your fingers in a little bit of everything." Young has grown up with his company; he started working for American Zinc in the Joplin (Mo.) mining district as an accountant when he was 18. And quite obviously he enjoys his work.

When he is in St. Louis (he is away on company business almost half of the time), Young works in his office every night well past closing time. After dinner at home, he often pulls out a bridge table and goes to work again—on American Zinc business, not bridge. He usually works on holidays and occasionally on Sundays.

• **"Goes on Forever"**—Only by working like this can Young run his company and the load of outside activities he carries. When he retired as president of the American Zinc Institute in 1949, the directors gave him an "atmospheric clock" (it needs no winding) and commented "it goes on forever like its new owner."

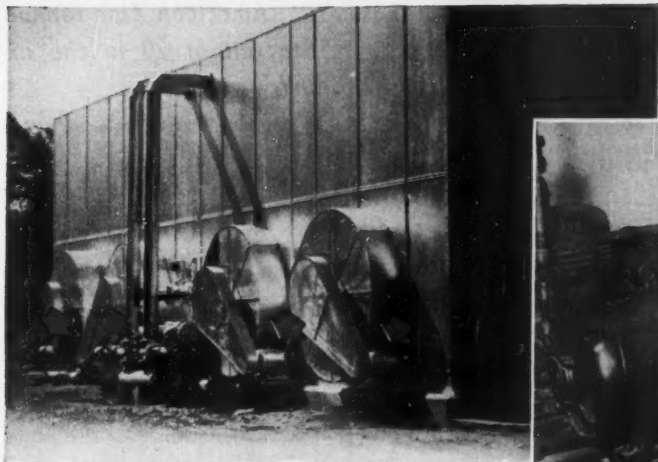
A lot of Young's activities are entirely outside the industry. He was recently board chairman of the St. Louis Chamber of Commerce. This year he was chairman of a multimillion-dollar sustaining fund for the YWCA. He is a member of the budget and finance committee of the General Council of the Presbyterian Church. And he is on the boards of Baltimore & Ohio R.R., Southwestern Bell, General American Life, and Scullin Steel.

• **Born to Work**—Young was born to hard work, and in a lead-zinc atmosphere. His first home was a farm about 20 mi. north of Carthage, Mo., in the tristate area.

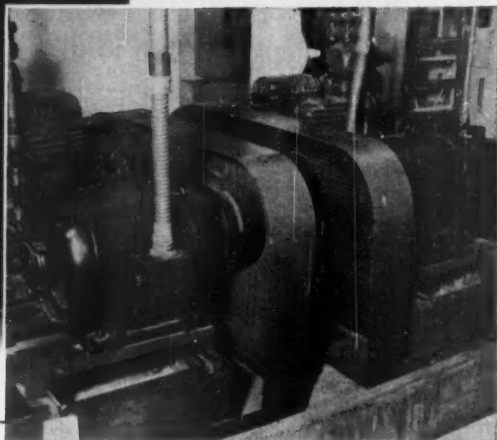
After he finished high school, Young went to Queen City Business College in Springfield. This was an humble school, consisting of one room upstairs over a hardware store, but it found jobs for its students in a hurry. Young spent only two months there—studying six days and four nights a week while holding down a part-time job. Then he got a job with a grocery company. That ended his formal education.

The retail business didn't appeal, so Young turned to the mines in Stotts City, got a job feeding a crusher with a long-handled shovel for 17½¢ an hour—the price of a pound of slab zinc today. Then he spent a year in the office of the Carthage Foundry & Machine Works. And at 18, he went to work for American Zinc.

• **The Speedup**—Progress was at an Horatio Alger pace from then on. At 19, Young was made cashier and office manager of the company's mining operations in Jasper County and was put in charge of all company-leased lands



Four Century 5 horsepower splash proof motors driving fans.



Two Century 30 horsepower motors driving refrigeration compressors.

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**TYPE SC-
SQUIRREL CAGE MOTORS**



1/8 to 1/4 horsepower



1 to 1 1/2 horsepower



2 to 15 horsepower



20 to 125 horsepower



150 to 400 horsepower

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**To Give You Long-Life Performance
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The correct selection of the right combination of motor type, speed, power, torque, frame and mounting keeps Century motors on the job.

Team work between your motorized equipment producers and Century motor engineers means that you always get the right motor—selected from Century's wide range of types and kinds, in sizes from 1/8 to 400 horsepower for single or polyphase alternating current and direct current. You can be confident that you get top performance from the fine equipment these motors drive.

Skillful application makes sure that Century motors meet the exacting requirements of the machines they drive. That's your assurance of dependability.

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Century Electric Company is celebrating its 50th year in the electrical industry.

CE-690R

for all your electric power requirements

Two Fast Daily LCL Merchandise Cars of a FLEET Operated by The Minneapolis & St. Louis Railway (via the Peoria Gateway)



Between points in the Great Midwest and cities of the East and South, Less-Carload-Freight moves faster over the M. & St. L. and its time-saving Peoria Gateway Connections.

Typical examples of Thru Cars in Daily LCL Service via the M. & St. L., saving Hours and even Days of Time in Transit on merchandise shipments, are two, east and westbound, between Minneapolis-St. Paul, Minnesota, and Indianapolis, Indiana.

For information on M. & St. L. Fast LCL Service, write, wire or phone for 1951 Merchandise Freight Schedules... When it's LCL... Ship M. & St. L.

The MINNEAPOLIS & ST. LOUIS Railway

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NOBODY BUT ARO
OFFERS YOU
**INSTANT
PUSH-BUTTON
REVERSE**

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ARO's new push-button valve means instant reverse action... no need to remove from work... no stopping to turn levers... no wasted time.

Adjustable clutch (available with positive clutch). Length 7-11/16"... outside diameter 1-5/16"... weight 1.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. Write for literature.

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ARO

AIR TOOLS Also... LUBRICATING
EQUIPMENT... HYDRAULIC EQUIPMENT... AIRCRAFT
PRODUCTS... GREASE FITTINGS

"... American Zinc ranked
18th out of 20 in the in-
dustry..."

AMERICAN ZINC begins on p. 124

in the county. Six years later, he was put in charge of all American Zinc mining operations in Missouri. In another five years (when he was 30), Young was manager of all the company's mines—which then spread across five states. He held that job for nine years and then, in 1928, became vice-president in charge of operations.

Two years later, Young was made president.

• **Before and After**—At that time, American Zinc was producing only about 4% of the total domestic output of slab zinc. It ranked 18th in the industry among 20 companies. It stood fifth among five in production of zinc oxide. It was tenth in quantity of concentrates mined. It produced no cadmium at all.

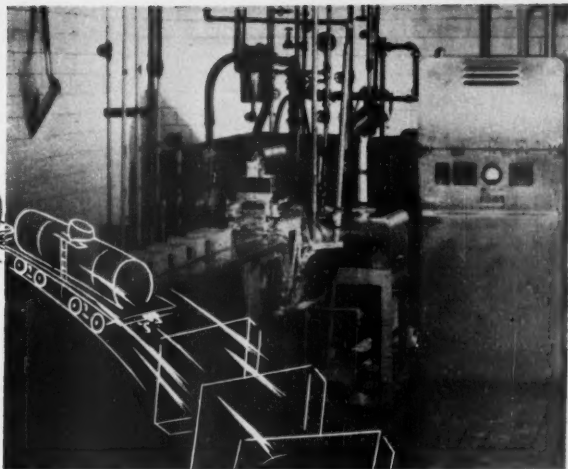
Last year American Zinc shipped 14% (140,466 tons) of the total domestic slab zinc output. It now stands second in domestic production of primary slab zinc (Anaconda is first); third in output of zinc oxide (behind New Jersey Zinc and St. Joseph Lead); fifth in the quantity of concentrates taken from its own mines; third in production of cadmium.

• **Royalties**—One source of American Zinc's income that promises to grow fast is the Heavy-Media Separation Process that the company put into operation in 1935. (The process is one for removing rock from ore by immersing it in a solution heavy enough to float the rock, but light enough to let the ore sink to the bottom.) About 70 plants now using this process pay American Zinc royalties that last year totaled \$85,521. Some 40 more plants that will use the process are now under construction.

• **Supply Problem**—The big factor still limiting income is the scarcity of zinc concentrates. Partly because of government stockpiling, the demand for zinc has exceeded supply since 1950. Because of the frozen price of 17¢ a lb. on slab zinc in the U.S., foreign sources of concentrate (mainly in Canada and Mexico) are hard to tap. Foreign smelters are selling slab zinc for as high as 28¢ a lb. Obviously, they can afford to bid higher for concentrates than their American competitors.

That's one reason why some men in the zinc industry think the government should raise the slab zinc ceiling. Young is not one of them. He thinks aluminum is too competitive with zinc now to take a chance on a price increase.

One of the production lines for Dixie Margarine at Capital City Products Co., Columbus, Ohio. Automatic VOTATOR Margarine Manufacturing Unit (at right) saves the labor as well as eliminates the product variations inherent in batch processing.



"flavor-guarding"

STARTS WITH FAST PROCESSING

LIKE LOCKING the barn door after Dobbin hits the road, there's little value in carefully packaging and code-dating food products if the flavor has been lost in processing.

That's why efficient producers, like the makers of popular Dixie Margarine, use Girdler's modern VOTATOR Margarine Manufacturing Apparatus.

This equipment takes the refined oils and other ingredients used for Dixie, and chills, emulsifies, and crystallizes them in a continuous, closed system. Oxidation or other contamination is impossible, and freshness is safeguarded at all times.

Then too, there's no time for flavor to be lost. Processing takes place in a matter of seconds—since the VOTATOR Heat-Transfer Mechanism is the most effective application of basic heat-transfer theory yet devised. Thus, in addition to improved quality control, substantial savings in labor, time, and space are made.

When processing is completed, the makers of Dixie Margarine continue the "flavor-guarding" in which they take just pride. Each quarter is aluminum-foil-wrapped to seal in flavor, and each package is automatically code-dated for subsequent check-ups.

If you process any liquid or viscous materials requiring heating or cooling, sterilizing, plasticizing, emulsifying, crystallizing, quick-freezing, or aerating, it will pay you to investigate VOTATOR Heat-Transfer Processing Apparatus.



WRITE FOR FREE BOOK

This 32-page book gives you the complete story on VOTATOR Heat-Transfer Apparatus. Describes the processing of an amazing variety of food and industrial products. Contains 12-page technical section with valuable reference data and charts. Write for your free copy today! The Girdler Corp., Votator Div., Louisville 1, Kentucky.

VOTATOR—T. M. Reg. U. S. Pat. Off.

THE **GIRDLER** CORPORATION
Votator Division

HEALTH



S.O.S. Patient pulls switch, then tells the wallbox speaker what she wants.



COMING Station secretary tunes in on patient, hears her story, reassures her, and then resets intercom by throwing a switch.



DETAIL Nurse checks patient's record before she starts for the room.



TREATMENT The nurse reaches patient's bedside. Knowing what was needed, she brought hypodermic, thus saved making extra trip.

Hospital Intercom Helps Nurses Do More

For years, hospitals have been trying to figure out a way to make the trained nurse more of a nurse and less of a bellhop. The more time a nurse wastes on useless errands the higher the hospital's costs are, and the bigger the nursing staff it needs.

St. Luke's Hospital, in Cleveland, thinks it has the answer in a special intercom system, designed by Royal Communication Systems, Inc., also of Cleveland. Since its first trial at St. Luke's, the intercom system has started

spreading fast to other hospitals in the Midwest.

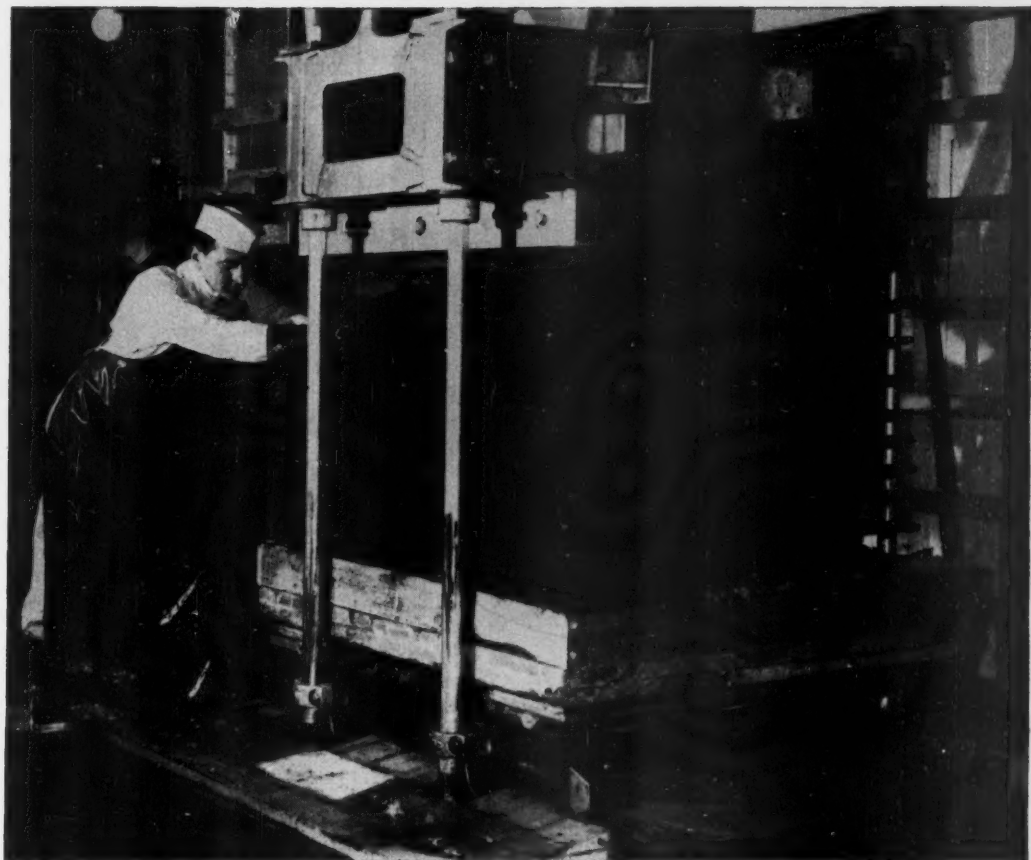
• **Two-Way Communication**—This is how the system works:

In each section of the hospital, the 25 to 30 beds are linked to the nurse's station by the intercom. At each bed is a wall box containing the speaker, and equipped with a toggle switch that the patient operates by a light pull on a cord.

Generally, the call is taken by a secretary on duty at the station. She finds

out what the patient wants and then dispatches to the rescue a nurse, student nurse, orderly, or aide—depending on which is needed. If the patient just wants to ask a question—foolish or otherwise—the secretary answers it, and no one has to go trotting up the corridor. In pre-intercom days, a nurse answered every buzzer call in person.

When the call is finished, the secretary can reset the patient's intercom by throwing a switch at her station desk. That sounds simple. But it's one of



HOW NYLON SQUEEZES EXTRA PENNIES OUT OF APPLES

In cider presses as in many other filter presses, Du Pont nylon fibers are helping industry cut costs. Although the nylon filter cloths in this apple press cost three times more than ordinary cloths, they have lasted more than five times as long. •

A powerful squeeze of 3000 pounds per square inch gets the juice out of the apples. Nylon's high wet strength keeps the cloths from bursting under the strain. After each squeeze, nylon's slick surface makes it easy to shake off the apple pulp. And the juice doesn't shrink them.

Another advantage of nylon filter cloths is that they don't soak up juice. This makes them lighter to handle and easier to wash. One washing a day cleans them of juice, where ordinary cloths need several.

These nylon properties prove useful for other filtration and press-cloth operations—such as clay filters, cottonseed press cloths and sewage filters. And nylon's *extra* properties are valuable for countless other products.

For example, nylon's resistance to marine rot makes fishing nets last longer. Nylon's resiliency gives rope the ability to withstand sudden shocks. Nylon's strength permits sewing threads to be made thinner, yet stronger. Perhaps

nylon has the something extra to improve your production process . . . to help you make a new or better product.

NEW BOOKLET: "Nylon Textile Fibers in Industry," contains 23 case histories, shows you how businessmen are using nylon in industry today. Write for your copy. And tell us your fabric or fiber problems. Address Nylon Division 104, E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware.

**DU PONT
NYLON FIBERS**



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

for fibers today...for fibers to come...look to Du Pont.

NYLON
ACELE® acetate rayon
ORLON® acrylic fiber
VISCOSE RAYON
DACRON® polyester fiber

DU PONT
TRADE MARKS



THE success of an industrial nation depends on its ability to convert metal castings and forgings into finished products. The faster this can be done—the greater the quantity of conveniences that can be provided to the public in a given period of time.

In national emergencies this ability can mean the difference between life and death, victory and defeat—in fact, even between war and peace. For the best way to prevent disaster is to be prepared for it.

Kennametal*, as a tool material, turns forgings and castings into machined parts, far faster than steel tools, and is many times as durable. One man and a Kennametal-tooled machine can do the work of three men and three machines equipped with steel tools. The time of two men and two machines is saved—plus the time and materials required to produce the steel tools.

Used in mining tools—Kennametal cuts and drills coal and other materials faster, and outwears steel tools a hundredfold. Production time is saved, plus the time and materials required to make the far greater quantity of steel tools.

Used at points in machines where severe wear occurs . . . Kennametal stubbornly resists abrasion, corrosion, and heat. The machine performs accurately much longer. Again, production time is saved, plus time and materials needed to build replacement machines.

All costs are based on time—in peace these costs are reflected in prices that are cheap or dear; in war they are reflected in lives that are saved or lost. The time that Kennametal makes—important in peace—is imperative in war.

KENNAMETAL Inc.
Latrobe, Pa.

WORLD'S LARGEST Independent Manufacturer
Whose Facilities are Devoted Exclusively to Processing and Application of CEMENTED CARBIDES

" . . . The intercom has another advantage — it can serve as a detective . . . "

HOSPITAL starts on p. 130

the biggest advantages of the Royal system.

• **Resetting**—There had been hospital intercom systems before. But the nurse always had to go to the patient's bed to reset the instrument after a call. Knowing that she had to make the trip anyway, she rarely bothered to answer the call. Instead she used the intercom signal as a call buzzer and walked to the source of the summons. As a result, the intercom actually saved no steps. It took an average of 3 min. from the first signal before the patient could make known his wants. With the Royal intercom system, it's a matter of seconds.

At St. Luke's, 415 outlets are being installed, at a cost of about \$100 apiece. But Dr. F. G. Carter, the superintendent, says you can balance against that an annual saving of \$37,500. That's the combined salaries of one Registered Nurse for each of the hospital's 15 stations. Nurses no longer needed on station duty have been shifted to other posts, formerly undermanned.

• **Equipment**—The system saves nurse's steps in many ways. Now, when she makes her first trip to the patient she knows what to take with her. Or, if she needs further equipment after she reaches the bedside, she can call for it by intercom, instead of having to go back herself.

The original system at St. Luke's took two years to design and engineer. Since then various refinements have been worked out. More complicated setups are in the offing for use in specialized wards or surgeries.

• **Private Eye**—The intercom has one added advantage. It serves as a detective. The nurse on station can turn on the patient's speaker at any time she wants to check up. Thus she can tell if a delirious patient is trying to stray away from bed or otherwise get into trouble. With the amplifier turned up, the nurse can even listen to the patient's breathing by remote control. The electronic spot-check saves many weary rounds on foot.

One sensational piece of sleuthing was turned in by the intercom. A nurse, suspicious of a nervous case, kept the switch turned on in his room. Two nights passed uneventfully, then the station secretary heard the stealthy opening of the window.

A nurse, sent hot-footing, arrived in time to intercept the patient as he was trying to clamber out a fifth-story window.



Salesography

SAYS:

There's Real Pay Dirt In
The "Hidden Markets"

RIGHT now, you may be forgetting markets that would give you millions of new customers—without adding a dollar to your selling costs. Impossible? Let Salesography, the new concept in sales planning, show them to you.

Salesography shows that having distribution in all the major cities—and concentrating your advertising there—is no assurance that you are getting your goods through to the consumers as effectively as you might think.

True, volume sales of many items are made in the large cities. But to whom? Salesography shows that buying centers are, to a large extent, dependent on the purchases of small town customers.

Salesography shows the extent to which small town people go to the city to buy. It also

proves that advertising directed primarily at city readers fails to reach the small town customers whose purchases are counted in city store sales.

If you expect to sell the 90,000,000 people living outside the big cities, they must be pre-sold—by advertising. And the key to their 90,000,000 pocketbooks is through the advertising pages of **PATHFINDER**.*

In and around small cities and towns, **PATHFINDER** is the leading news magazine. This is the market where **PATHFINDER** concentrates 80% of its 1,200,000 circulation. The **PATHFINDER** representative is trained to help you work out your distribution and advertising plans. Consult him—he is at your service.

*SELL **PATHFINDER** READERS AND YOU SELL THEIR NEIGHBORS

News magazines find their greatest readership among the people of more than average income and intelligence—the people who influence the buying habits of their community. In and around small cities and towns, **PATHFINDER** leads all news magazines.

Pathfinder

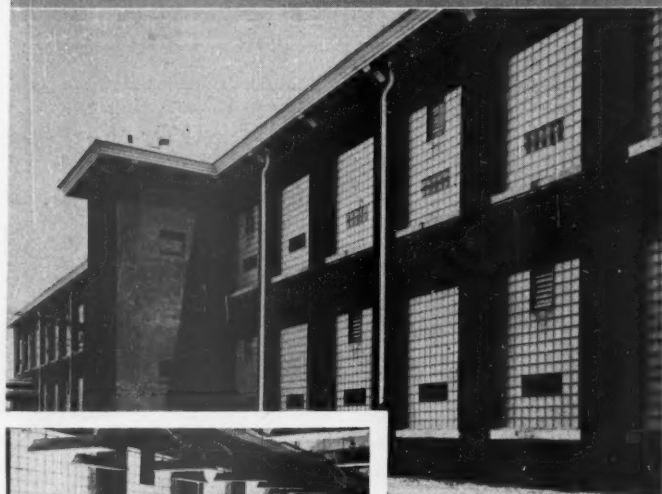
THE FAMILY NEWS MAGAZINE

WASHINGTON SQUARE • PHILADELPHIA, PA.

GRAHAM PATTERSON, Publisher

- ▶ Improve working conditions...
- ▶ Effect operating economies...

with **PC GLASS Blocks** for sash replacement



IN THIS SASH REPLACEMENT job, the Poinsett Mill of Abney Mills, Greenville, S. C., PC Functional Glass Blocks were used with Vuo block inserts for vision. Ventilators were also included in some of the panels—making this installation a practical example of the PC Vision-Lighting Plan. This plan consists of orientation-keyed areas of PC Functional Glass Blocks (selected for sun or non-sun exposure) used with vision-ventilation areas as required.

● Replacing old, inefficient sash with modern, handsome PC Glass Blocks makes more usable space available by admitting more daylighting over wider working areas. Workers are therefore more comfortable; eye fatigue is reduced; production is bettered. And PC Glass Blocks reduce heating and air-conditioning costs, because they have more than twice the insulating value of ordinary, single-glazed windows. Besides, they rarely need repairs or replacements. There's no periodic and expensive painting and puttying. Involving no critical materials, they are immediately available. Send the coupon for additional information on PC Glass Blocks.

*PC Glass Blocks
are immediately available
...no construction delays!*

Pittsburgh Corning Corporation
Dept. M-101, 307 Fourth Avenue
Pittsburgh 22, Pa.

Without obligation on my part,
please send me a FREE copy of
your booklet, "The Mark of a Modern
Building—PC Glass Blocks."

Name

Address

City State

PITTSBURGH CORNING CORPORATION

PITTSBURGH 22, PA.



GLASS BLOCKS

The mark of a modern building

Distributed by Pittsburgh Plate Glass Company; W. P. Fuller & Co. on the Pacific Coast; Hobbs Glass Ltd. in Canada; and by leading distributors of building materials everywhere.

Painful Thoughts

Science reveals that the more you use your brain, the more your head will ache. Age, marriage ease the hurt.

It takes brains to have a headache. And the more you use the brain, the worse it aches.

Businessmen have long suspected this fact. Headaches rank just after the common cold as a cause of lost time and slowed motion in offices. Now medicine has caught up to the conclusion. Its findings have just been published in the *Annals of Allergy* by Dr. Henry D. Ogden, who bossed a three-year research program at Louisiana State University's Medical College.

• **Education**—According to Dr. Ogden's statistics, education shapes up as a dangerous factor in the splitting head division. Among college-trained people, 77.2% reported that they had headaches. Among people with minimal education, the figure plummeted to 38.8%. Among the suffering classes, medical school student heads ached at a rate of 85%, executives at 77.3%, professional groups at 70.8%. Housewives outheaded clerical workers by 69.8% to 68.2%.

Farmers, the research indicated, do little thinking, for their heads ached to the modest tune of 50%. Laborers had practically no headaches at all.

If you have a brain and it hurts, here's a crumb of consolation: The older you get, the less it will ache. And you might try getting married. Unwed heads hurt at a 70.8% clip; for the married, it's only 61.1%.

• **Allergy Link**—Causes of headaches proved hard to isolate, apart from the possession and use of brains. Generally, though, headaches and nasal conditions due to allergies tend to be coupled in the running. Thus headaches have a high incidence among cold sufferers and among people with a family history of allergy.

As for getting rid of the headaches, Dr. Ogden was able to offer some modest help. The ergotamine drugs, he said, "give symptomatic relief in an impressive percentage of all frontal headaches." It's not quite that simple:

• The ergotamines have to be administered as soon as the headache starts. Taken later, they do no good.

• When the headache pops up, you have to find a doctor quickly, to get under the effective deadline. The ergotamines come by prescription only.

• Having taken ergotamines, you should be out of circulation. If you continue working, you are likely to have unpleasant reactions.

**1. Q. DO YOU KNOW
WHERE TO GET
INDUSTRY-WIDE WIRE
AND CABLE SERVICE?**

A. General Electric Wire and Cable Department offers you a nationwide wire and cable service—distributors in every major market area, wire and cable specialists in district offices located in leading cities throughout the country, and the Wire and Cable Department headquarters at Bridgeport. Get in touch with these sources for the wire and cable you need or for complete information on any wire and cable problem.

**2. Q. HOW CAN YOU SAVE UP TO 30% OF
THE INSTALLATION COST OF THE
WIRING AND ELECTRICAL EQUIPMENT
IN A NEW OFFICE BUILDING?**

A. It is possible to obtain an installation saving of up to 30% by the use of a 480Y/277-volt distribution system for fluorescent lighting, motors, and other electrical equipment. The economies of G-E remote-control switching for the fluorescent lighting make the installation of this higher-voltage distribution in the entire building economically practical.

**G-E Construction Materials Division for
service where—and when—you need it**

Quick, comprehensive service on any G-E wiring material is yours. Just call your local G-E Construction Materials distributor. There is one in every major market area to give you service—where you need it—when you need it.

Remember, too, that at any G-E Construction Materials district office or at the G-E Construction Materials Division at Bridgeport, engineers and specialists are ready to help you on your wiring materials problems. Address Section K64-1010

You can put your confidence in—
GENERAL  ELECTRIC

READ HOW THESE

**G-E WIRING FACTS
CAN IMPROVE YOUR BUSINESS**

**3. Q. WANT A FLEXIBLE ELECTRICAL SYSTEM
THAT ADAPTS TO ANY FLOOR LAYOUT?**

A. Changing floor layouts often involves expensive electrical work. But not when floors are Q-Floors equipped with G-E Q-Floor wiring—the complete steel floor with raceways spaced on six-inch centers. With this system raceways are always available just under the floor surface for immediate installation of outlets. Before you plan your new facilities, investigate G-E Q-Floor wiring for economy in the years ahead.



**4. Q. HOW CAN WATCH DOG* STARTERS HELP
YOUR PRODUCTION PICTURE?**

A. G-E Watch Dog fluorescent starters can keep your production picture bright by keeping lighting at its best. Watch Dog starters promote steady, efficient fluorescent lighting—cut out aging lamps that flicker and blink.

*Registered Trade Mark of General Electric Company

**Mail this coupon today
for free information**



Section K64-1010, Construction Materials Division
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☐ Please send me a free copy of Your Stake in
Q-Floor Wiring, Pub. No. 18-110UF.

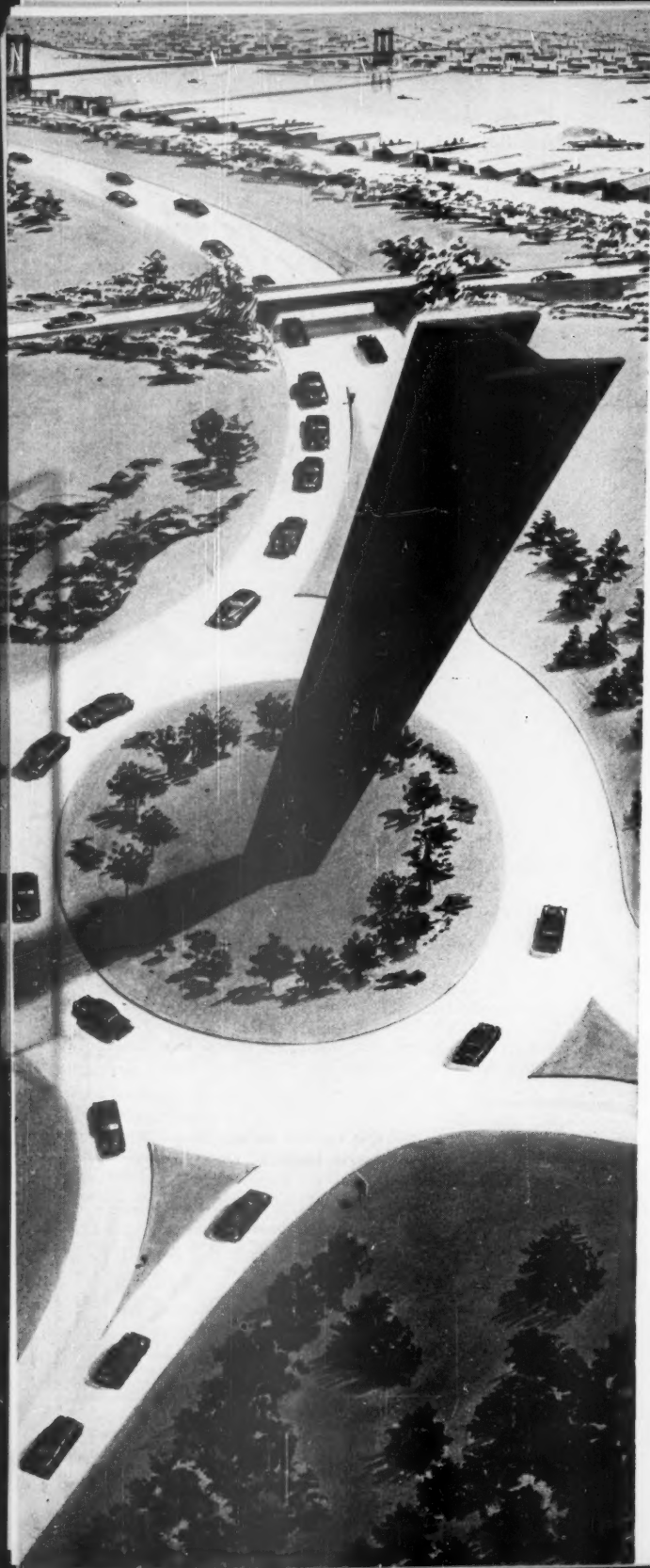
☐ Please send me booklet on higher-voltage distribution systems
for office buildings.

Name Title

Company

Address

City Zone State



New Jersey's magnificent highway program, which will make motoring safer and streamline mileage, gets valuable assistance from Barium. Here is a still-leg crane on the Hackensack River Bridge at Laurel Hill, N. J. Built by Clyde Iron Works, Inc., one of Barium's member companies, this sturdy crane, and hundreds like it, helps make life easier, safer, for motorists in scores of construction projects.

Hard Foundation for Easier Living ...Smoother Travel

Nothing is more closely linked with modern life—and modern comfort—than steel.

In one form or another, steel is an integral part of our travels, our comforts, our protection, our pleasures. It is with us day in, day out, in a multitude of applications.

And because steel is so integral a part of modern living, it is only natural that its production, forming, fabrication and erection should also be integrated—carried out by a series of companies working closely together, pooling their knowledge, resources and production facilities to supply the nation's most essential commodity.

Barium Steel Corporation is such a close-knit organization. Some of the diverse activities of its fifteen member companies—and their importance to you—are shown in the picture-captions. To learn how Barium can serve you—address Barium at 25 Broad Street, New York City.



This fireboat, which patrols the harbor of Vancouver, British Columbia, is powered by five V-12 Sea Raider Special gasoline engines, built by Kermath Manufacturing Company of Detroit and supplied by Kermath Ltd. (Canada), Barium subsidiaries. Sea Raider Special engines, as built by Kermath, are internationally famous for their complete dependability under all operating conditions.



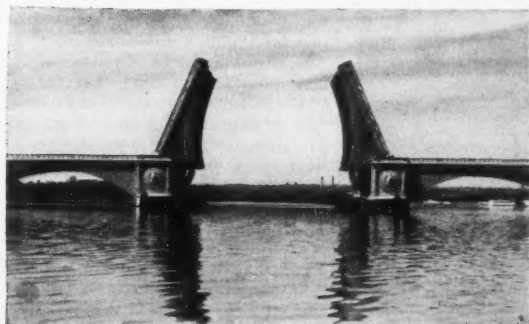
Massaging the face of the Polo Grounds is a never-ending chore—but it's handled efficiently and easily by this one-ton roller, built by Clyde Iron Works, Inc., Duluth, Minnesota, another member of the Barium family. In addition to rollers, Clyde builds hoists, derricks, whirleys, car pullers and hand powers—further evidence that if it's made of steel, Barium can supply you.



Wiley Manufacturing Company, Port Deposit, Maryland, a Barium subsidiary, has built a series of steel barges like this one for the Army. Barium, through its various divisions, embraces virtually every phase of steel making, processing and fabricating. As a result, Barium's part in the National Defense Effort is increasingly important to every one as America strengthens its bulwarks of Freedom.



Automobiles, farm equipment, business machines and all kinds of home appliances are lighter in weight, smarter in appearance because of stampings made by Geometric Stamping Company, Cleveland, Ohio—an important player on the Barium team. Here, for example, is an end cover, economically produced in quantity for the Royal Vacuum Cleaner Company. Barium teamwork enables manufacturers to cut parts costs without cutting quality.



The graceful Arlington Memorial Bridge, spanning the Potomac, eases the Capital's traffic snarl. Fabricated and erected by Phoenix Bridge Company, a Barium subsidiary, it is but one of many links in traffic arteries built by Barium. Other structures include the high level viaduct in the Pulaski Skyway at Kearny, N. J. and the Buzzards Bay Bridge over the Cape Cod Canal—the longest vertical lift span in the country.



BAYONNE BOLT CORP. • CENTRAL IRON AND STEEL COMPANY • CHESTER BLAST FURNACE • CLYDE IRON WORKS, INC. • CUYAHOGA SPRING COMPANY • ERIE BOLT AND NUT COMPANY • GEOMETRIC STAMPING CO. • GLOBE FORGE, INCORPORATED • INDUSTRIAL FORGE & STEEL, INC. • JACOBS AIRCRAFT ENGINE CORP. • KERMATH MANUFACTURING CO. • KERMATH LIMITED (CANADA) • PHOENIX BRIDGE CO. • PHOENIX IRON & STEEL CO. • WILEY MANUFACTURING CO.

MARKETING

There Are Lots of People Downtown



SWARMS OF PEOPLE, like these in New York's Herald Square, keep downtown stores flourishing. But swarms of cars spoil parking, drive some customers to suburbs.

People are customers. Where there are customers, there are stores. It's as simple as that.

It's true that, when the war ended, city dwellers started rushing to the suburbs in vast herds. Department store operators, with their pockets full of money, ran right after them. Suburban branches—trim, uncongested, irresistible to madame—sprang up in all directions.

The decentralization of retailing became a well-established merchandizing phenomenon. On top of everything else, branch stores tend to show a better profit per sales dollar than the mother store. Success of the branches thus poses a question: Have the merchants given up on their downtown stores?

• **More Investment**—The answer is a flat no. Investment in the downtown stores is too heavy to let go by the board. And such stores are still drawing plenty of customers. As a result, many retailers are actually pouring a lot of money into the parent stores. A spot check of some key cities from coast to coast turns up figures like these:

• In Boston, Jordan Marsh is in the midst of an \$11-million program to rebuild its main store. Filene's has just announced plans for modernization of an entire city block.

• In Cleveland, Halle Bros. is putting \$7.8-million into intown modernization and expansion.

• In the heart of Atlanta, Rich's just opened a new \$2-million Store for Men.

• In Chicago, State St. stores have spent some \$50-million in the past five years to update and expand operations.

• In Dallas, Neiman-Marcus is putting \$5-million into downtown expansion, \$1.5-million into suburban.

• In Manhattan, Gimbel's is undergoing a \$7-million refurbishing.

• Pittsburgh, which calls itself "the department store town," has seen \$10-million worth of improvements on its intown stores since the close of World War II.

These are only a handful of the bigger examples. Renovations, new parking lots, new buildings, added space are reported from city to city.

It's true that many retailers are putting up new branches at the same time. But plainly they are still putting heavy stakes on the mother store.

• **Crowds**—Primarily, the big market accounts for all this. Half a glance at any downtown district during the noon hour tells the story. An executive of F. W. Woolworth, which has signed up for a



"THEY SAVED TAFFY, TOO, DAD!"

"THAT'S fine, Bobby. Thanks to the good work of our Fire Department, we all got out safely and the house wasn't damaged much."

Fires usually happen to people who think "It can't happen here!" Co-operate with your Fire Department during Fire Prevention Week, October 7th to 13th—and the year-round. Help them in their untiring efforts to protect lives and property by doing your utmost to eliminate the *causes* of fire.

Keep matches out of the reach of children . . . be sure your heating system is clean and does not become overheated . . . have chimneys inspected for defects . . . ban-

ish careless smoking habits . . . have defective electrical wiring replaced . . . don't let rubbish accumulate. And by all means, carry adequate, full-standard fire and extended coverage insurance—both on your home and place of business—with a nationally recognized company such as Hardware Mutuals. Our *policy back of the policy*® makes your interests our first consideration.

Your friendly Hardware Mutuals representative will recommend an insurance program for you without obligation. To get in touch with him, all you need do is call Western Union and ask for Operator 25, who will give you your representative's name and address.



Insurance for your AUTOMOBILE...HOME...BUSINESS

Hardware Mutuals.

Stevens Point, Wisconsin • Offices Coast to Coast

HARDWARE MUTUAL CASUALTY COMPANY • HARDWARE DEALERS MUTUAL FIRE INSURANCE COMPANY

NEW Airco Oxygen Process reclaims nickel... chromium from stainless and high-alloy scrap

DURIRON COMPANY, of Dayton, Ohio, a well-known, mid-western foundry, wanted a method for reclaiming highly-critical nickel — and chromium — from their stainless and other high-alloy scrap. They wanted to re-use this tightly-allocated metal for making castings in their own shop.



W. T. Bryan, Duriron Co., and **H. C. Linde**, Airco Technical Sales Representative, working together, used oxygen refining as a means of removing carbon from the alloy steel bath. On the basis of experience, it was found that the carbon removal was accomplished without excessive oxidation of chromium from the high alloy scrap charge. Equally important, all of the nickel charged was recovered. This permitted the foundry to reclaim all scrap.

The Duriron Company was highly pleased with these results, and have adapted this process as standard practice... and now produce low-carbon, high-alloy castings from material that otherwise would be useless to them.

For further information about this modern method for reclaiming high-priority nickel — and chromium — from your scrap, call or write your nearby Airco office for Technical Sales assistance.



AIR REDUCTION

AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY

REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL

Divisions of Air Reduction Company, Incorporated
Dealers and Offices in Principal Cities

"... the fate of the downtown stores has been sealed

..."

DOWNTOWN starts on p. 138

big chunk of space in Webb & Knapp's \$5-million building to be erected in New York's Herald Square (picture), puts it this way: "We put stores where there are people. Whether they live there or work there doesn't make any difference."

It's true that this all-important factor works both ways—as Woolworth suggests. Just as "people" explain the stores' continuing faith in downtown operations, they explain the growth of the outlying branch. Only this week, Dr. Roy Peel, Director of the Census, noted that the growth of regions around the metropolitan areas from rural into urban areas was a major development. There are more people in both the big cities and in the outskirts, and the retailer is sticking close to their heels. But in sheer density of market, the in-town store's advantage is still obvious.

• **Varied Effects**—Two case histories show clearly how the stress of population is pushing in diverse directions.

Rich's traditional faith in the downtown area in Atlanta is at least partly explained by this fact: So far there are few really large population areas rising around the cities in the Southeast. The smaller specialty stores are finding it profitable to move into the suburbs. But the market just wouldn't justify the \$1-million or so it would take to set up a complete suburban department store. When and if Greater Atlanta, say, reaches a population of 1.5-million, then the story may be different, merchants agree.

In Los Angeles, the population trend has dictated the reverse approach. Here the residential growth is chiefly in the outlying sections. The downtown stores' share of total sales in the county has dropped drastically over the long term—from 74.9% in 1919 to 35.2% in 1950. It looks as though the fate of the downtown stores in that city has been sealed. There hasn't been a lick of expansion in the downtown stores since the war. The trend is all outward—Bullock's in Pasadena; May, soon to open a huge branch in Lakewood Park; Robinson in Beverly Hills; Sears, Roebuck in the San Fernando Valley, to name a few. There are still plenty of people downtown. But the money has moved to the outskirts.

• **Downtown Spurt**—Los Angeles, however, seems to be one of a kind. You can cite other cases where the downtown area has taken on new life. Thus, last month in Detroit, Jack S. Sallens, which has operated Carson's neighbor-

Mobilize your offices for
conversion and expansion!



Use Johns-Manville Asbestos Universal Movable Walls for offices where you need them, when you need them. Made of non-critical materials, they give you complete freedom in planning or rearranging space.

● Reallocation of existing space and partitioning of new space can be done easily and quickly with Johns-Manville Universal Movable Walls. Made of asbestos, these walls are ideally designed to help business and industry meet the space problems involved in the defense effort.

The flush panels have a clean, smooth surface that's hard to mar, easy to maintain, and are extra strong to withstand shock and abuse. They're light in weight, easy to erect and relocate. The "dry wall" method of erection assures little or no interruption to regular routine.

Johns-Manville Walls may be used as ceiling-high or free-standing partitions. The complete wall, including doors, glazing and hardware, is installed by Johns-Manville's own construction men under the supervision of trained J-M engineers—responsibility is undivided.

An estimate will convince you that the cost of J-M Movable Walls compares favorably with other types of wall construction. For full details, write Johns-Manville, Dept. BW, Box 158, New York 16, N. Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.

*Reg. U. S. Pat. Off.



Johns-Manville

ASBESTOS

Movable Walls

INSTALLED NATIONALLY BY **JOHNS-MANVILLE**

Nebraska offers great opportunity as plant location

In this debt-free state
where old-fashioned
Americanism still pre-
vails, you will find—

- splendid labor
- cheap electric power
- abundant natural gas
- no tax shackles

—for Low-cost trouble-free Operation

Write this division of state
government for specific
information. Dept. R

NEBRASKA RESOURCES DIVISION
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an important
POINT!

in your
product's
performance

Potter &
Brumfield
RELAYS

Accuracy and Dependability

... reflecting in your product the
sign of good design ... the assur-
ance of perfect performance.

Leading supplier of relays for
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"... downtown's biggest hope is its biggest headache ..."

DOWNTOWN starts on p. 138

hood stores for 20 years, opened shop a few steps from Hudson's big downtown store. In Cleveland, where suburban developments are jumping with the population, an old downtown center has taken new life. Years ago Higbee moved to the Van Sweringen Terminal Towers, leaving its old building near Playhouse Square empty. A few years ago Allied Stores Corp. bought three stores—Lindner, Davis, and Sterling & Welch—and moved part of its enterprise into the old Higbee stores (BW—Aug. 20 '49, p. 64). That left the Lindner building empty—and now Bonwit Teller has moved in.

At this point, a question dangles. Is all the downtown renovation and expansion evidence of faith in its future? Or is it a matter of necessity, forced by the growing competition by the suburban stores?

There isn't any real measure of the strength of the competition. For one thing, everything is growing—the population, the economy—and there are little data on what share of sales growth the suburban stores can claim.

• **From Scratch**—It's generally conceded that the suburban stores have grown faster than the downtown stores in the last few years. They could hardly help it, since they were starting from scratch. Hence comparative figures don't mean too much. However, Malcolm P. McNair, in a Harvard Business School report, Operating Results of Department and Specialty Stores in 1950, uncovered some figures that bear on the problem.

McNair reports that a study of 89 companies with sales of over \$10-million shows that the 30 that had branch stores had increased the number of branches from 64 in 1949 to 74 in 1950. Those companies that had had branch stores in operation for two full years increased their 1950 branch store sales 16% over 1949. The parent stores increased sales only between 3½% to 4%.

McNair turned up an interesting sidelight on the situation. A branch store is more help if the parent store is located in a city of over 500,000 than if the parent is in a smaller city.

• **Split Opinion**—The retailers are divided on whether the branch store helps or hinders. One big store with several branches says it regards the branches as just so much more competition. In Cincinnati, a department store spokesman says, "We're worried to death. The suburban store has hurt like hell.

We should show sales increases of 12% to 18% if we were keeping up with over-all retail gains, and we're not showing it."

Another Cincinnati man reports that it has been "a constant and organized effort" to keep dollar sales volume up where it should be. These efforts include night openings, special sales, added parking facilities, and the like.

Yet even in Cincinnati, the feeling—without figures to back it—is that the big downtown stores are far from dead. And since World War II, there has been as much, if not more, big downtown development than new suburban centers.

• **Closed Circuit**—Boston, where Jordan Marsh and Filene are apparently running a nip-and-tuck race for the most impressive intown expansion, offers statistics that indicate that city stores during the 1930's lost upward of \$30-million in retail sales. But they figure they lost it to themselves, to their own stores in the suburbs.

May Dept. Stores, which has just opened a new branch in outlying St. Louis (BW—Sept. 29 '51, p. 24), thinks that its branches help rather than hinder the parent store. Traffic is so heavy downtown that, by siphoning some of it off to the rimlanders, the mother store figures it can give better service, hold its customers better. Most of Chicago's big ones with suburban stores—Marshall Field, The Fair, Lytton's, Rothschilds, Goldblatts—take the same view. They feel the main stores couldn't have handled the business from the heavy new population and that the dollars their branches bring them is so much gravy. Another indication that State St. is no dead duck is that two of the big stores—Mandel and Carson Pirie Scott—have not gone in for suburban stores and are doing well on sales and profits.

• **Parking**—There's no doubt about one point: The same congestion that is the downtown's greatest hope is its biggest headache. Women more and more want to shop in their own cars—and big-city traffic balks them.

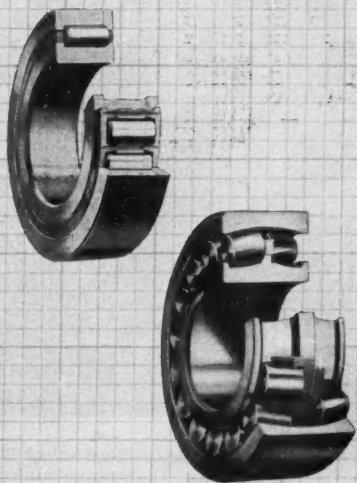
But despite traffic hazards, the downtown store can make a good case for itself. It has the goods, in the first place. It's stocked as most suburban stores can never hope to be stocked. Harried mothers are thankful to take their wriggling youngsters to the comparative peace of the branch store to fit them out. But when they have something big to buy, they'll go where the merchandise is.

Finally, the psychological lure of the big store is often very real for the suburbanite. To run down to the neighborhood branch for an afternoon shopping spree is a commonplace. To sashay out to the big city for a heavy day is adventure.



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CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

144

MARKETING BRIEFS

The dime newspaper is a reality in Los Angeles. Three papers—Times, Examiner, Herald-Express—have all raised their price from 7¢ to 10¢. Another paper, the Mirror, has raised its ante from 5¢ to 7¢. The News (now 7¢) may also up its price.

Fair trade notes: A federal grand jury is investigating the possibility of collusion among drug wholesalers and retailers in the Pittsburgh area. The drug people say all they did was to get together informally to discuss the state fair trade laws following the Supreme Court's banning of nonsigner clauses. . . . The American Fair Trade Council promises to launch a national campaign "for the restoration of fair trade to its status" prior to the court decision. Name of the campaign: "Operation Restoration."

Business gifts? A new company, Prize Productions, Inc., has "something new in gift-giving" for company executives and sales promotion men. It is women's silk stockings embroidered with the company's slogan.

Prices of antibiotics continue to fall as production increases. Latest price reductions: (1) Parke, Davis has cut the price of chloromycetin by 10% and 15%, the third reduction since the company started to make the new antibiotic; (2) Chas. Pfizer has cut terramycin prices by 15% to 40%. The total price cut on capsules has been 40% since the introduction of the drug 18 months ago; (3) Lederle Laboratories of American Cyanamid cut prices on aureomycin in amounts ranging up to 40%.

Another butane lighter, competitive in price to conventional lighters, will make its appearance this month. Least expensive model will sell for \$5.95. Butalite Corp. of America will make the new lighter. B-B Pen Co. will distribute it.

Schulte's chain of tobacco and haberdashery stores is due for a major shakeup. It will get new financing to convert some of its stores over to the sale of food and soft drinks.

Liquor prices skidded at Park & Tilford this week. The company cut its bottled-in-bond bourbon 16%, making the price in New York \$4.99 a fifth as against the old price of \$5.97. You can lay the cut to what Park & Tilford euphemistically calls a "favorable inventory position."

BUSINESS WEEK • Oct. 6, 1951

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Blend in Citrus

Florida growers line up purchase of Snow Crop, No. 1 in frozen juice field. They'll keep own label, too.

In the frozen concentrate industry the citrus growers are climbing into the driver's seat.

The California growers made the first bid for power a few months ago when the California Fruit Growers' Exchange, which controls about 70% of that state's orange crop, put out a concentrate under the famous Sunkist label (BW-Jul.21'51,p100).

Now the Florida Citrus Exchange, which controls about 25% of the Florida crop, is making its bid through a deal with Clinton Foods. If the deal goes through as now scheduled, the Florida fruit growers will acquire Clinton Foods' extensive processing facilities plus an extremely valuable trade name—Snow Crop, the best-selling label in the field right now.

Early this week the contract was very close to settlement. The Clinton board had voted yes; so had the Exchange's board. All that remained was some haggling over the details.

• **Florida Deal**—Here is basically what the deal will do if no hitches develop:

- Give the Exchange three major concentrate plants that account for about 25% of the state's total processing capacity. These Clinton plants (second only to Pasco Packing Co. in the industry) are supposedly worth about \$12.5-million. The Exchange will buy them outright.

- Provide the Exchange with the exclusive use of the Snow Crop label for Florida juice.

- Bring the 7,500 acres of citrus groves owned by the Snow Crop Division of Clinton into membership in the Florida Citrus Exchange co-op.

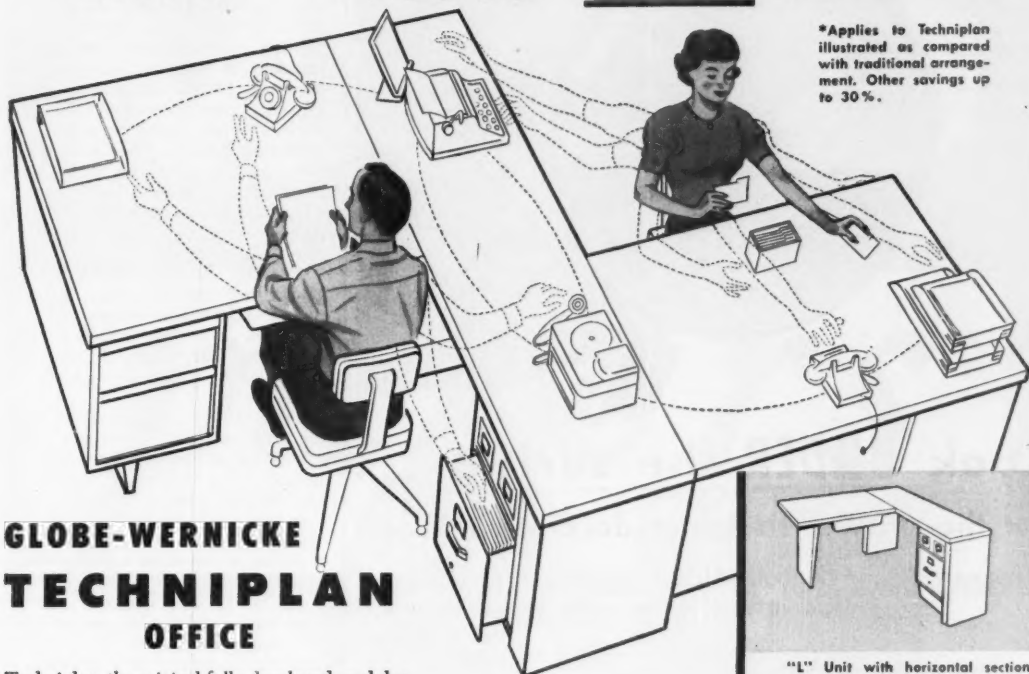
- Take Snow Crop out of the citrus processing business and make it the marketing agent for the Exchange's concentrate output. (It doesn't affect Snow Crop's other lines of frozen foods.)

- **Details Unsettled**—There are still some important details to be thrashed out between the Exchange and Clinton. One thing yet to be settled is the price. According to reports from Florida, the bickering on this point doesn't concern the processing facilities so much as the value of Snow Crop's large inventory of canned concentrate. Insiders say that, with the inventory and "other factors," the price tag will certainly come to considerably more than \$12.5-million.

A second matter still to be worked

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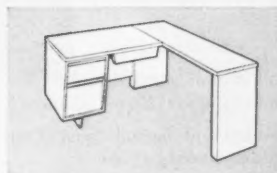
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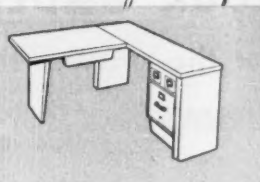
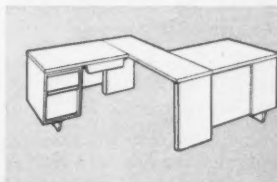
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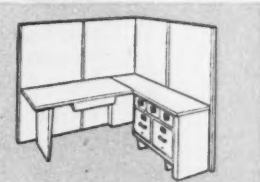
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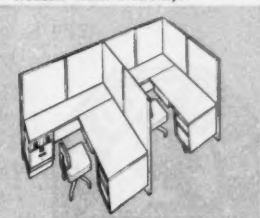


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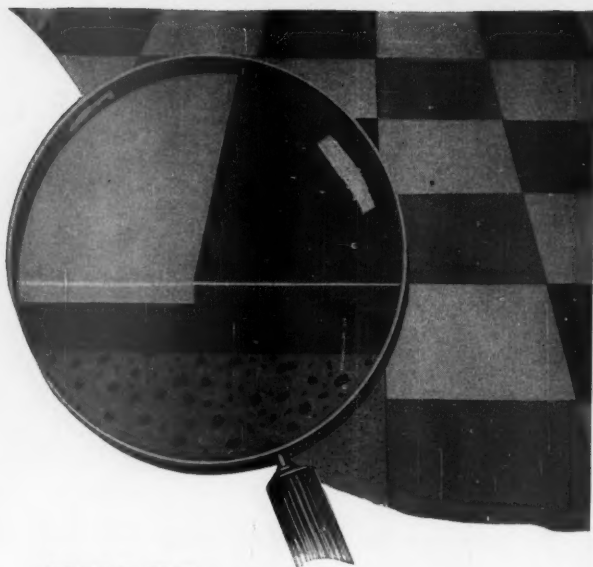


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out concerns the packers who turn out juice for the Snow Crop label. Observers claim that the two principals are trying to bring the packers into the deal, too.

Other details are hard to pin down at this point. However, according to almost everyone in the know, the deal provides a new job for C. W. Metcalf, president of Clinton Foods. A few weeks ago Metcalf resigned as of Oct. 15. He is slated to become head of the Exchange's new processing setup.

• **Mutual Benefits**—The pending deal has a stack of advantages for both the Exchange and Snow Crop.

For the Exchange it means, above all else, some measure of stability in the raw fruit market.

Florida's citrus growers have been getting rich on the golden flood of orange concentrates during the past few years. Yet they worry constantly about seesawing prices. It takes only a few maverick growers to break the price line.

Last year, for example, there was a big break in prices. This year there's the threat of still another break. A bumper crop is coming up and, as one observer puts it, Florida growers "are hoping a hurricane will blow about 10-million boxes off the trees."

Added to this is the big carryover inventory of about 17-million gal. of concentrates—way over last year. Growers have been afraid the big packers might ride along on their inventory for the first part of the new crop season in an effort to break the price.

• **Growers' Label**—The Exchange has been thinking for some time about getting into the production and marketing picture. It recently established the Scald-Sweet label (BW-Aug. 4 '51, p. 44). But the growers were aware that this was really only another concentrate label. The Snow Crop name gives them something to stack up against Sunkist. (The Exchange is not, however, planning to drop the Scald-Sweet label.)

• **Clinton Foods' Gain**—From Clinton's point of view the deal is also a bonanza. First of all, Snow Crop gets cash. And as one of Snow Crop's competitors puts it, "In this fast-growing business you can always use plenty of that." For example, Snow Crop is reported recently to have spent some \$1.9-million on 25,000 refrigerated concentrate dispensers for lunch counters and restaurants. It plans to extend the program by another 25,000.

At the same time Clinton also gets rid of the headaches of production in a fast-moving, topsy-turvy industry. Above all, Clinton Foods will no longer have to carry a backbreaking inventory of canned fruit juice. The growers are going to take on that burden if the deal goes through.

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FINANCE



TREASURY SECRETARY SNYDER with FRB's Gov. Powell (above) and chairman Martin are key figures in the . . .

New Policy Twist: Federal Reserve Eases Credit

The Federal Reserve Board says it's just a phase of its job of regulating the money market. It fears production will drop if money gets too tight.

The Federal Reserve Board is relaxing, at least for a time, the tight rein it has held on bank reserves since last spring.

FRB chairman William McC. Martin still believes that general credit controls operating on bank reserves—the traditional methods of central banking—have to be the starting point for any program of inflation control. But he has to consider the refunding and new financing problems that confront Secretary of the Treasury John W. Snyder. And he can't risk tightening credit so much that essential production suffers.

• Bear the Brunt—So FRB will try to accommodate both these needs. This means that much of the burden of preventing further credit inflation will fall on FRB Gov. Oliver Powell and his Voluntary Credit Restraint Committees. VCR will have the job of screening, from the essential defense and defense-supporting loans, those unnecessary loans that add to inflation.

The thing that has tipped the balance is the risk that production will drop if money rates get too tight. In order to keep defense and defense-supporting industries going in high gear, FRB has begun buying government securities from banks, thus increasing their reserves and permitting them to lend more money.

• New Twist—This pumping up of bank reserves by open market purchases

is a sharp new twist in policy. FRB says this is merely a necessary development in its normal job as a central bank: to maintain a given level of monetary ease or tightness. That, in practical terms now, means allowing legitimate credit needs to be satisfied without boosting interest rates. This is described by one FRB official as a policy of "neutrality."

• Reasons—The tightness in the money market that FRB is easing has been caused by several factors:

• A seasonal upturn in bank loans to business. This upturn normally starts in late summer and continues through the following spring.

• A steady climb in defense loans, as the defense program gets moving. This has caused part of the boost in business loans.

• More and more money is going into circulation, as is normal at this time of year. This cuts bank reserves, the basis of bank lending power.

• The Treasury itself has gone to the market three times since Sept. 1, for a total of \$600-million in new money.

• More of the Same?—Will this turn toward easier credit be a brief one, or will the logic of events lead to more of the same?

The answer over the rest of this fiscal year hangs on (1) the degree to which the demand for bank loans expands, and (2) the way the Treasury

is able to handle its financing problems.

• On the Spot—An upward surge of bank lending such as marked the last quarter of 1950 would put FRB on the spot. It would have to provide additional reserves because a large part of the loans would be for defense or defense-supporting activities. Yet they would add to inflationary pressures.

The drain on bank reserves by increased currency in circulation will get some relief during the rest of calendar 1951 from inflow of gold from abroad and bigger Federal Reserve "float" (credit to member banks for uncollected checks).

The Treasury's problem is to refund security issues and also raise some new money before the March, 1952, taxes pour in. Right now, the Treasury doesn't want credit any tighter because it is engaged in a big refunding of \$11.2-billion of notes with 1½% 11-month certificates (BW—Sep. 29 '51, p134).

During the week ended Sept. 26, FRB bought \$200-million in bills, close to another \$100-million in longer paper. This gave banks the reserves to back more loans to business, offset the outflow of currency into circulation, and accommodate the Treasury. FRB hopes this will be enough to handle needs for the rest of this year. But it will no doubt buy again if money rates show signs of getting tighter than now.

• Needs New Money—But meanwhile the Treasury has an armament program to finance. It will need to raise from \$3-billion to \$5-billion of new money until the big March receipts come to the rescue.

But a lot depends on these ques-

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tions, to which nobody has the answers right now:

• Will Snyder raise enough money from the new tax bill to come out even on his cash budget for 1952? Some experts think that he will come out even, or come close. Others seriously doubt that taxes will bring in that much.

- Will individuals keep on saving money the way they have in the last six months? If so, the Treasury should

Buffalo and Syracuse banks try to outbid each other for deposits. That worries banking officials, who may lose on higher savings bank dividends.

The rate competition for time deposits that has broken out in Buffalo (BW-Sep.29/51,p131) has the New York banking department a bit worried. The department is afraid that commercial banks that boost rates on thrift accounts to 2% may be forced into unwise policies in order to maintain earnings. All the commercial banks in Buffalo and all but one in Syracuse were paying 2% as of Oct. 1.

That's why banking superintendent William A. Lyon is investigating to see how much the stiffening of money rates this year justifies banks in raising their interest on time deposits. A lot of banking observers wonder whether an increase of $\frac{1}{4}\%$ or $\frac{1}{2}\%$ in yields on various types of loans and investments justifies doubling the rate banks pay on thrift accounts.

• **The Issue**—The State Banking Board, of which Lyon is chairman, will have to decide in a few days whether Buffalo savings banks should be permitted to boost their dividend rates on savings deposits above the present 2% limit. Right now, both commercial banks and savings banks are limited to 2%.

Some of the very banks that have boosted rates are questioning the wisdom of this trend. It's reported that the Liberty Bank of Buffalo and the Marine Trust Co. would have preferred to go to 1½% rather than 2%, but that they had no choice when Manufacturers & Traders Co. started the ball rolling.

• **Not Unanimous**—Small banks outside Buffalo, which compete in their home towns with branches of the big Buffalo commercial banks, are singing the blues.

"We should all have been consulted," says one small-town banker. "We might have arrived at a more practical rate, say about 14%." That rate, he thinks, would have kept the savings banks from asking permission to go over 2%. "This thing," he groaned, "is getting to be a vicious circle."

meet with some degree of success on its new E-bond program as well as find an easier market for its securities from institutional investors. It should be able to keep cash payments on maturing E-bonds to a minimum. Excess of redemptions over new sales has been dropping from a high of \$134-million in March to \$84-million in August. But if individuals start spending again the way they did last year, the situation could get rugged.

Another banker looks at the cost angle. He says his bank averages about 4% on its investments. "If we pay 2% to thrift depositors, the remaining 2% isn't enough to maintain reserves, pay business costs, and pay our employees properly."

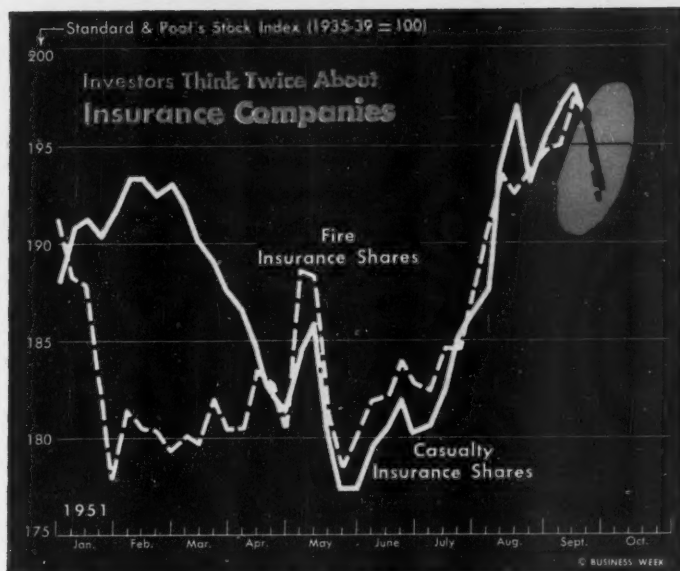
• **Risks Mount**—Of course, thrift accounts are only part of the business of a commercial bank. But they are fairly important to some banks of the area. Liberty has the highest percentage of the three big Buffalo banks. About 43% of its deposits as of June 30 were time deposits, compared to 25% for M&T and 28% for Marine Trust.

The danger is, of course, that banks in such a position will take longer chances on loans in return for a higher yield, buy higher-yielding corporate securities that are riskier and not so marketable as governments, and tie up a higher proportion of their assets in higher-yielding mortgages. It happened in the 1920's. And everybody knows what happened after that.

• **Bid for Hot Money?**—When a bank shifts assets into 4½ and 5% mortgages, it is reducing its liquidity. For only the Federal Housing Administration and Veterans' Administration mortgages, which yield 4% and 4½ at par, are easily marketable. That might be all right if at the same time the bank is increasing its thrift deposits proportionately.

The catch is that a sizable proportion of the money that is attracted to thrift accounts by a 2% interest rate will probably not be thrift money at all. It could be corporate funds, temporarily attracted by a 2% yield without danger of price fluctuations.

That seems to explain why some Syracuse banks will pay 2% on accounts as big as \$20,000 or \$25,000, while Buffalo's M&T will pay on \$15,000. Few individuals put that much money in thrift accounts. It looks like a bid for hot money.



FIRE AND CASUALTY stocks reached new highs for 1951 a few weeks ago. Now . . .

Insurance Boom Falters

Dark reports of underwriting experience in 1951 to date discourage investors. And people are worrying again about inflation: They look for other hedges.

A few weeks ago, the fire and casualty insurance shares were sitting pretty. Standard & Poor's indexes for both groups were at their highest point since Korea. Then all of a sudden the market got cold feet (chart).

What happened? You can pretty well set it down to three things:

- Investment-grade shares in general have been dropping in the last few weeks.

- July and August reports on underwriting experience of fire and casualty insurance companies aren't nearly so encouraging as had been expected earlier.

- People are starting to get worried again about inflation.

- **Day of Glory**—The big boost in fire and casualty shares had been going on since the end of May. It was part of the general rally in the stock market that carried the Dow-Jones industrial average to its highest levels since early 1930.

One of the characteristics of this rally has been the runup in stock groups that had previously been unpopular. Insurance shares, which hadn't been doing well, began to pick up along with the unpopular groups. Then as the rise went on, pension funds and other

institutional buyers began picking them up.

- **Low Yield**—At the start of the rally you could buy the shares of blue-ribbon insurance companies at discounts of 25% below book value. And you could get plenty of good quality stocks at discounts of as much as 40% or 50% below book value. The reason is, of course, the same reason why most bank shares sell at sizable discounts: Dividend yields are low in comparison with yields on industrial shares.

But, as other investment-grade stocks started going up, investors finally realized that property-insurance companies are, in a sense, investment trusts. The portfolios of fire insurance companies contain more common stocks than those of casualty companies. But both types get some good out of the rise in value of the shares they own.

Now the rise has tapered off, and insurance stocks have gone with the rest.

- **Too Much Outgo**—There are other reasons why the insurance shares have been hit. So far, underwriting profits during the second half of this year haven't offset the poor experience of the first half. This has affected prices of insurance shares to some extent.

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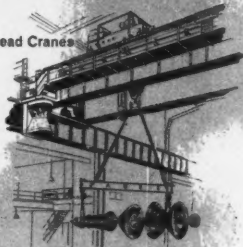
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insurance companies make a practice of not paying dividends out of their underwriting profits, anyway. Underwriting income is kept separate from investment income since, over the long term, underwriting profits and losses tend to cancel each other out.

So an unfavorable underwriting trend need not, in theory, affect the market value of the stock. It often does, however. Investors reason that if an insurance company runs in the red—pays out more in expenses and losses than it takes in premiums—the company is going to have to take the difference out of investment income.

• **Bad Half-Year**—During the first half, the insurance companies had a very unhappy experience with underwriting. Alfred M. Best Co., Inc., which keeps score on insurance, reports that the loss ratio climbed from 49.2% of the premium dollar in first-half 1950 to 56.6% in the same period of 1951. The combined ratio of losses and expenses rose from 88.5% in 1950 to 95.5% in first-half 1951. This happened in the face of a 15% jump in premium volume of representative stock fire insurance companies.

For the casualty companies, Best shows an even darker picture. Though premiums climbed 12%, the loss ratio climbed from 55.4% of premiums to 63.6%. Combined total expense and loss ratios had reached an ominous 99.8%, compared with 92.1% in the 1950 period.

• **Delayed Punch**—The fire companies suffered from delayed claims arising from the big wind last November (BW—Jun. 30 '51, p94). They have also taken a beating on automobile insurance. And the casualty companies have suffered even more from a sudden increase in auto accidents (BW—Jul. 7 '51, p126).

Just the same, people figured that increased business would soon catch up with the losses. This could happen, but it hasn't yet. July reports, the latest available from casualty companies, have not been too encouraging. And the National Board of Fire Underwriters has reported that August losses were \$55-million, up 6.1% over July. Losses for the first eight months were around \$495-million, up 5.3% over the 1950 period.

• **Inflation Bogey**—Finally, signs point to more inflation. That isn't very good medicine for property insurance companies, even though most security analysts consider fire insurance stocks pretty good long-term inflation hedges. Rates do catch up with increasing values after a while. And the relatively heavy holdings of common stocks owned by the fire companies are supposed to do pretty well during inflation. But in the early stages of inflation the rise in losses outruns the rise in premiums.

*"Those blanks aren't scrap...
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Waste is something Norm can't stand. The same goes for Tom Brinker, manufacturer of portable welding units and a long-time Inland customer. "Every time you form a lamination for your welder," Norm observed, "you leave a 4 x 7 inch piece of 22 gauge electrical sheet steel that you can't use. Why not let us find you a customer for those blanks?"

Norman Grant is an Inland Steel sales representative. His experience told him that those 4" x 7" blanks had more than scrap value. Especially at a time when steel is in such great demand. With his trade contacts, Norm was sure he could find a buyer.

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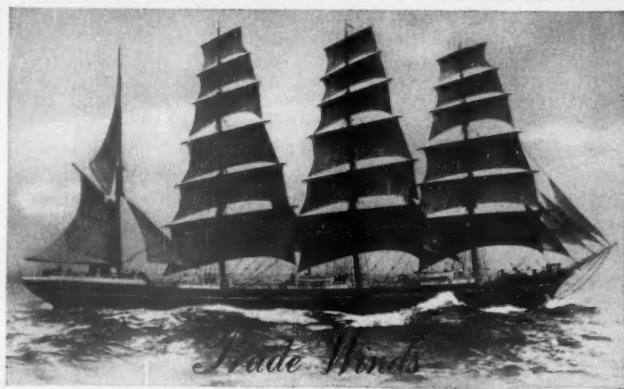
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Talon Splits Stock

By reclassifying its common stock, Talon stock is more marketable—without loss of control.

A problem that often confronts management of a closely held company is how to convert part of its investment into cash without risking loss of control.

That's the problem that bothered controlling stockholders of Talon, Inc., No. 1 company in the zipper trade. Talon also wanted to have the common stock listed on the New York Curb Exchange.

• **An Old Device**—For its answer, Talon harked back to a device that was often used in the 1920's, but hasn't appeared much lately.

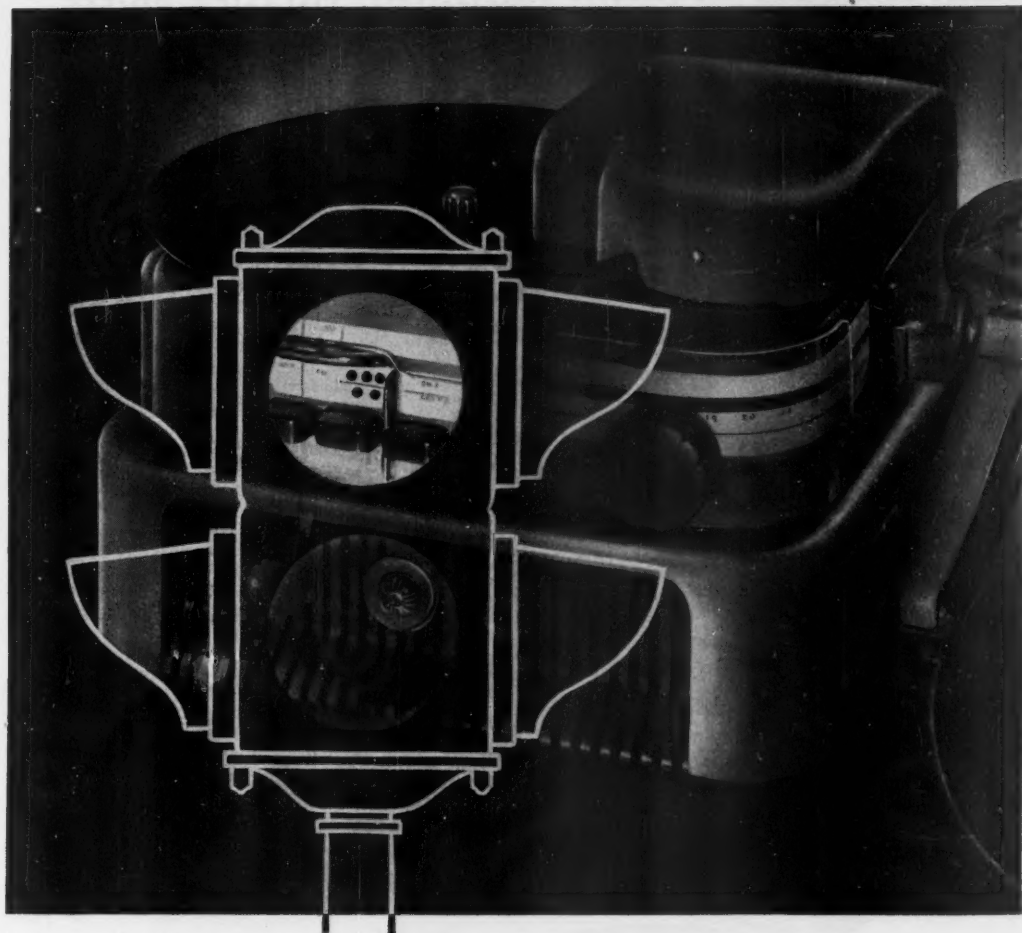
To get the stock listed, it wrote stockholders, "It is felt that reclassification of the present common stock . . . will provide marketability without necessarily changing the stockholders' proportionate voting rights." It asked stockholders to approve, at a special meeting, a split of each share of common stock into one-half share of voting Class A and one share of nonvoting Class B. And last week a majority of Talon common stock was voted for the plan.

Naturally, a move like this would make the stock more marketable, since controlling stockholders would be able to sell some of their Class B stock without losing control of the company.

• **Eat Their Cake**—Here is the sort of situation in which nonvoting stock has often been used: Suppose a group holds 20% of the stock of a company, enough for working control as long as the rest of the shares are widely held. Some of the members of this group need cash for other ventures. Or else they figure their executor ought to be in a position later on to sell stock in order to pay estate taxes. Splitting the stock into a voting Class A and a nonvoting Class B allows them to eat their cake and have it, too. The smaller stockholders have the same privilege. But since they don't have control of the company, it has less value to them.

Under the Talon plan, stockholders have two half-shares for each common share they had before.

• **Sharp Words**—Before the special meeting took place, the Talon proposal was sharply criticized by financial columnist Joe Livingston, of the Philadelphia Evening Bulletin, in Talon's home state. He pointed out that since 1926 the N. Y. Stock Exchange has refused to admit to listing any company whose common shares have unequal voting rights.



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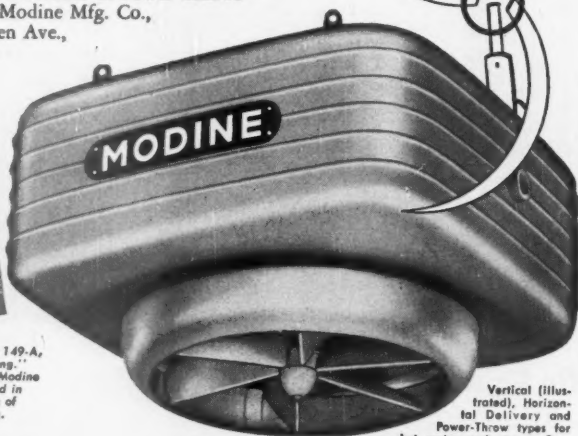
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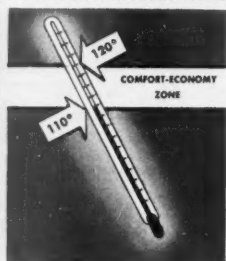


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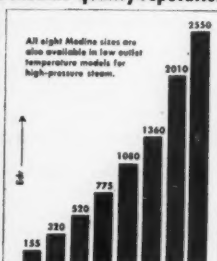
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FINANCE BRIEFS

Government obligations falling due within 12 months now total \$53.3-billion. A year ago such debt added up to only \$41-billion.

Wall Streeters are watching the spectacular gyrations of Crystal Oil & Refining shares on the New York Curb. Last week the company's preferred, which has \$149-a-share of dividend arrears, jumped \$50 to \$130; the common gained more than \$9, to \$12.87. A few months ago the preferred sold at \$60, the common at \$2.50 a share. Cause of the zoom: unconfirmed rumors that Crystal has uncovered one of the richest oil fields on record.

Harvard's Endowment Fund—the nation's largest and oldest (BW—Jun. 3 '50, p72)—jumped 11% in value in the year ended June 30. It hit a record-breaking \$274-million. The rate of investment return likewise rose from 4.45% to 4.85%, highest level recorded in 17 years. Behind this spectacular showing is the fund's large holding of common stock.

Marine Midland Corp., as expected (BW—Aug. 25 '51, p126), is now taking steps to acquire a bank in Syracuse, a city not hitherto served by any of its units. The Syracuse Trust Co. will be acquired by the bank holding company through an exchange of stock. Last June the bank reported \$71-million of deposits.

The stock-split trend (BW—Sep. 8 '51, p131) continues unabated. American Smelting & Refining Co. and Penn Electric Switch stockholders will soon be asked to approve 2-for-1 splits, Foote Bros. Gear & Machine a 3-for-2 split, Capital Transit 4-for-1.

Rail equipment makers are still enlarging their output of nonrailroad items (BW—Apr. 1 '50, p80). Westinghouse Air Brake Co. has just acquired Melpar, Inc. The latter is now filling military orders for sonar, radar, communications, guided missiles, and the like.

West Virginia Pulp & Paper Co. will spend \$50-million on new plant facilities during the "next few years." To finance this expansion, it has arranged for \$15-million of standby bank credit lines, will soon publicly sell \$20-million of new serial debentures.

Commercial Solvents Corp. has arranged to sell \$25-million 3½% 20-year notes to an insurance company group. Proceeds will pay for a comprehensive expansion program now under way.

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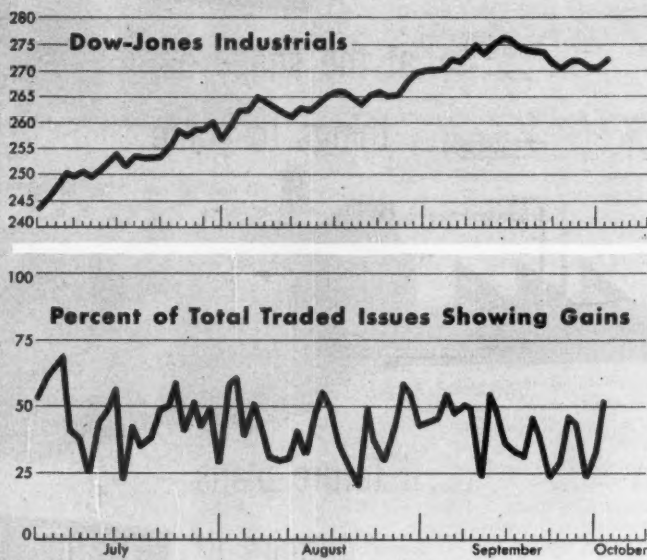
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THE MARKETS



SPURTS in the Dow-Jones average and the majority trend of stocks this week brought...

New Life for Wall Street

The latest upward trend postpones the long-predicted downswing. Especially in low-priced stocks, prices are being bolstered by speculation by the general public.

The question most frequently asked in Wall Street these days is: "How long will it last?"

Against the predictions of Wall Street professionals, the market this week was moving upward again. The Dow-Jones industrials (upper half of chart) showed a spurt. They had been drifting downward after peaking above 276 in mid-September.

Soothsayers on the Street are a bit rueful about this turn. But most of them are sticking to their prophecy of recent weeks that the market is due for a spill. One indicator that guides them is this fact: There've been few days since the new rally started in July when a majority of stocks traded have shown gains (lower half of chart).

• **Public Buying Stocks**—Yet the reaction hasn't happened yet as the pessimists foresaw it. For the general public is beginning to come into the market. You can see that by the way volume has held up lately even though the Dow-Jones industrial average was sliding off. And you can see it by the interest in low-priced stocks.

In the first two days of this week, for

example, about half the 10 stocks most heavily traded on the New York Stock Exchange were selling under \$20. Old speculative favorites are beginning to appear frequently on the ticker.

• **Air Pocket**—This suggests that some of the people who are coming into the market to "hedge against inflation" aren't long-term investors. What most buyers of low-priced stocks really want, more or less subconsciously, is to get in on the rise and then get out with capital gains. If prices show signs of weakening, these people are likely to sell out fast.

Speculative buying of this sort gradually forms an air pocket under any bull market. Sooner or later, the market is bound to fall in. However, if there's also a solid basis of long-term investing, the market doesn't stay swallowed up.

• **Strong for Long Run**—Few stock market analysts today believe the current bull market is anywhere near over. They point out: (1) Stock-earnings ratios are still very low in relation to other boom periods; (2) yields from common stocks are still far above yields from corporate bonds; and (3) the

prospects of long-term inflation indicate that, generally speaking, equities are better to hold than cash or debt securities.

But most analysts do expect that a stock market "correction" is coming before many months. Some think it's

as long as a year away. Others look for it to come within the next couple of months. In any case, they're advising investors to keep some of their funds in cash now. There will be bargains later when the market slips, they prophesy.

Stocks the Experts Like the Best

Few traders and investors ever agree on what are "good" stocks. Issues that are one man's meat can be another's poison. And that's as it should be. Otherwise, there would be no stock market.

Among investment trusts, however, you can see more of a meeting of minds. That may be due, as Wall Street cynics suggest, to a strong herd instinct among managements. But it could also be,

as the trade vehemently claims, the result of intensive investment research. And most fair-minded Streeters think that it is.

An analysis of the midyear portfolios of over 150 trusts shows this: \$975-million—25% of their \$3.5-billion of resources—are invested in the same 50 common stock issues. Here's the "favorite 50" as compiled by Aigeltinger & Co., investment trust specialist:

Ranking By Market Value

June 30, 1950	Dec. 31, 1950	June 30, 1951	Stock	Market Value (Millions)	Trusts Owning Shares	Shares Held (Thousands)	% of Issue Held
4	3	1	Amerada Petroleum.....	\$46.1	24	466	14.77%
9	7	2	Standard Oil (N. J.).....	41.5	68	688	1.14
2	1	3	International Paper.....	39.7	60	831	9.34
1	4	4	Gulf Oil.....	39.4	66	821	3.62
3	2	5	Continental Oil.....	35.8	60	729	7.50
13	8	6	B. P. Goodrich.....	30.3	52	574	13.96
6	5	7	Texas Co.....	30.0	58	651	2.36
10	6	8	Kennecott Copper.....	25.9	67	382	3.53
5	11	9	E. I. du Pont de Nemours.....	24.4	51	265	0.59
29	19	10	Monsanto Chemical.....	24.2	46	272	5.58
8	10	11	General Electric.....	23.7	71	449	1.55
11	15	12	Union Carbide & Carbon.....	23.4	65	399	1.39
20	9	13	Standard Oil (Cal.).....	23.3	43	517	1.80
15	17	14	Westinghouse Electric.....	22.2	69	627	4.08
14	14	15	Montgomery, Ward & Co.....	21.6	56	320	4.92
12	16	16	Sears, Roebuck & Co.....	21.0	39	399	1.69
23	23	17	Dow Chemical.....	20.8	44	223	3.42
18	12	18	Standard Oil (Ind.).....	20.5	48	326	2.13
17	13	19	Phillips Petroleum.....	20.0	55	483	3.54
25	18	20	Celanese Corp. of America.....	18.0	48	363	6.22
43	47	21	American Cyanamid.....	17.8	42	175	4.53
—	21	22	United States Steel.....	17.4	43	460	1.76
21	33	23	International Business Mach.....	17.1	30	71	2.43
—	26	24	Bethlehem Steel.....	17.1	55	364	3.80
37	32	25	Cities Service.....	16.9	39	172	4.43
22	22	26	United Gas Corp.....	16.5	53	855	7.30
24	28	27	Middle South Utilities.....	16.4	43	871	14.40
26	38	28	American Gas & Electric.....	16.3	44	305	5.71
45	24	29	American Viscose Corp.....	16.3	36	234	5.71
31	31	30	Humble Oil & Refining.....	16.2	23	144	0.80
—	25	31	Southern Pacific.....	16.2	50	274	6.40
7	20	32	General Motors Corp.....	16.0	57	346	0.39
39	30	33	Skelly Oil.....	15.7	25	194	7.43
—	27	34	Atchison, Topeka & Santa Fe.....	15.0	44	102	4.22
35	43	35	Johns-Manville Corp.....	14.9	48	266	8.48
47	35	36	Phelps Dodge Corp.....	14.4	41	235	4.64
16	41	37	Chrysler Corp.....	14.0	44	213	2.45
—	37	38	Socony-Vacuum Oil.....	13.4	51	455	1.43
—	36	39	Ohio Oil.....	13.2	41	266	4.05
—	46	40	Chas. Pfizer & Co.....	13.2	22	343	7.02
—	—	41	Merck & Co.....	12.9	30	152	6.20
41	42	42	Niagara Mohawk Power.....	12.7	33	593	6.31
30	29	43	International Nickel.....	12.6	33	389	2.66
28	45	44	Central & South West Corp.....	12.5	47	906	11.34
44	40	45	Youngstown Sheet & Tube.....	12.4	47	271	8.09
32	34	46	Louisiana Land & Exploration.....	12.3	19	331	11.12
—	39	47	Pure Oil.....	12.1	47	242	6.09
33	49	48	American Natural Gas.....	12.0	36	395	10.71
—	—	49	American Telephone & Telegraph.....	11.9	37	78	0.25
—	—	50	Allied Stores Corp.....	11.4	41	283	13.40

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DEFENSE BUSINESS

Civilian Goods Face New Cut

- Wilson's call for a huge rise in military production can't help cutting into the civilians' share.
- Allotments of steel, aluminum, copper will likely be slashed in second-quarter 1952.
- Mobilizers don't want to put industries out of business, but they don't know for sure how far they can go in cutting nonmilitary allotments.
- Metals expansion will help, but it can't offset an increase in the armament program.

Officially, Washington is promising to keep civilian production going next year at about the present rate. But don't count on it.

There are bound to be more cuts in consumer goods if military production increases as defense mobilizer Charles E. Wilson foresees in his third quarterly report.

Just how far the cuts will go—and when—depends on decisions yet to be made. Wilson himself refuses to predict any slashes at all. But he isn't talking beyond the first quarter of 1952.

• **Straw in the Breeze**—Already, first-quarter allotments of steel have been fixed at "slightly less" than October-December levels for consumer durables. They'll get somewhat less than 58% of their pre-Korea steel supply.

With this in mind, take a look at Wilson's forecast for military production, in this week's report: Deliveries of hard goods for the armed services will more than double in the year starting Oct. 1, 1951.

This means the military's take of raw materials, especially metals, will also soar. True, it isn't likely to be twice as much. But it's almost certain to outstrip anticipated increases in total metals supply. The only way to make up the deficit will be to take it from civilian lines.

• **Betting on Cutbacks**—That's the thinking of some of Wilson's aides—the men who have to make the tough decisions on how much metal goes to tanks, how much to refrigerators. They're girding themselves to cut back consumer goods again in the second quarter. How much depends on:

• **Military demands for metals.** Military needs now are estimated only for January-March. The only subsequent revisions will be up. That's for

sure. But officials want firmer figures before lopping other production.

• **How much metal the expansion programs will yield.** New steel, aluminum, and other production is coming in during the next two years. They won't take the military program out of the red, but they'll help.

• **How much more cutting the makers of consumer goods can stand.** That's something the controllers don't know yet. They only know they don't actually want to shut down plants.

• **The Military Angle**—The rate of deliveries of military hard goods is only a hint of actual metals use. Military production is already chewing up metal at a rate well above deliveries of finished items. That's explained by the six- to nine-month lag in fabricating and finishing. Happily, it also means a 100% jump in arms deliveries won't require a 100% jump in consumption of materials. About 25% would be more like it.

On the other hand, increases in U.S. and Allied military programs are yet to come. For example, the Pentagon has agreed to ask for about a 140-wing Air Force. Wilson's program is still based on 95 wings. And increased aid to our allies, either military or economic, would also force Wilson to raise his military production sights before next fall.

• **Expansion Quite Spotty**—Theoretically, some relief should come from the fact that industrial expansion, notably in steel and aluminum, is nearing the peak of its demand for materials. Long before they are in operation, these plants will have their structural steel in place and have the copper and aluminum for their equipment. This will release metal for other demands, a lot of it by next fall.

But other segments of the expansion program are lagging. It's partly due to metal shortages. Wilson has reduced CMP allotments for chemicals, electrical and electronic equipment, ferroalloys, power, petroleum refining, even some steel plants.

Projects retarded by allotment cuts are being staggered, to keep work going on those most urgently needed, with the others in a second wave. In steel, for example, Wilson ordered full speed ahead on ingot production, a delay on fabricating facilities until the new furnaces are ready.

• **How Much Butter?**—As to consumer goods, there's much heavy thinking in Washington, but little certainty. On the one hand, mobilizers talk seriously of reviving the so-called "death sentence" orders on use of copper and aluminum. Only last year small businessmen and their friends in Congress managed to talk NPA out of a ban on using these metals for venetian blinds, small hardware, and the like.

On the other hand, from Wilson down, the controllers want to keep industry going and unemployment at a minimum. There are many major producers of autos, appliances, and furniture whose plants and manpower aren't needed by the military program—at least not yet.

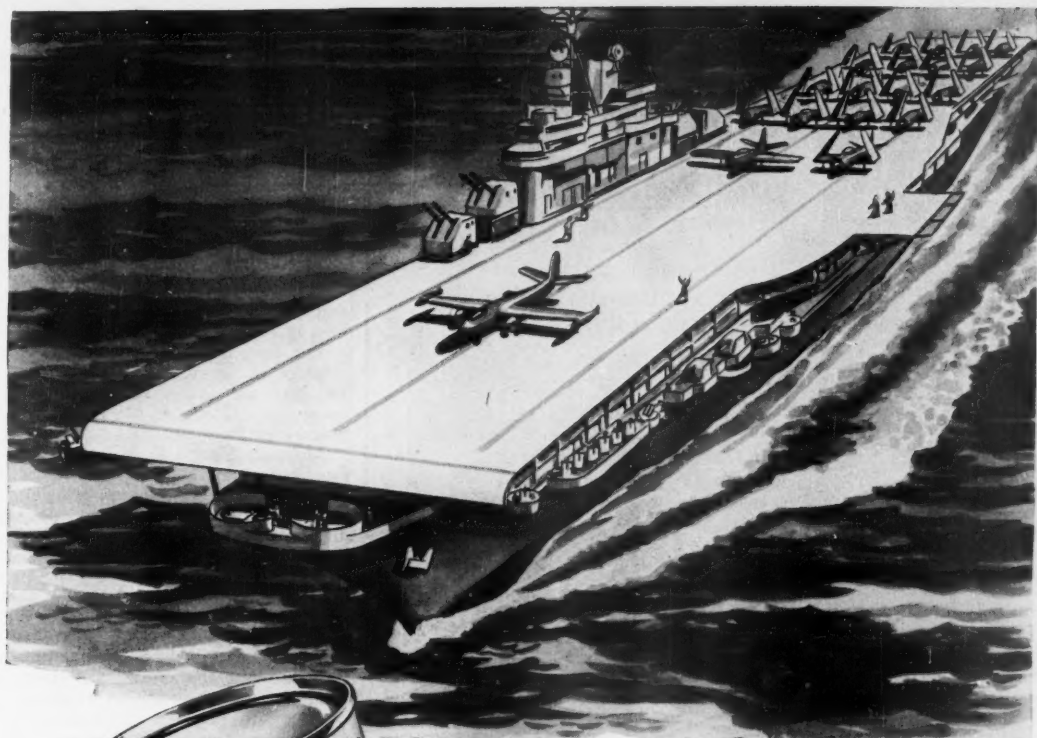
• **Walking a Tightrope**—This brings the controllers squarely against the S64 question: How much can you cut materials for consumer durables without closing plants?

It's not easy to answer, even in an industry of such giants as the auto makers. Present reductions in allotments will limit auto output to about 1.1-million passenger cars during the fourth quarter, provided the makers can find substitutes for some materials. The controllers don't think this cut will put anyone out of business.

But it's one thing to impose further cuts on a multiline operator like General Motors, and quite another thing for a smaller, single-line producer. The smaller company might be driven below its breakeven point, below the volume that keeps the plant operating.

• **No Choice**—The breakeven point is a mystery to the controllers. They frankly don't know when their new metals cuts will drive any given producer down to it. Yet their only alternative to industrywide cuts would be specific allotments for specific producers. That's an administrative and political impossibility.

The Wilson report gives one possible hint about targets for further cuts, however. It mentions that 2-million television sets and 3-million radios are in inventory and are "available to help offset the temporary production decreases" ahead. You can reason that radio-TV is in for some deep slashes.



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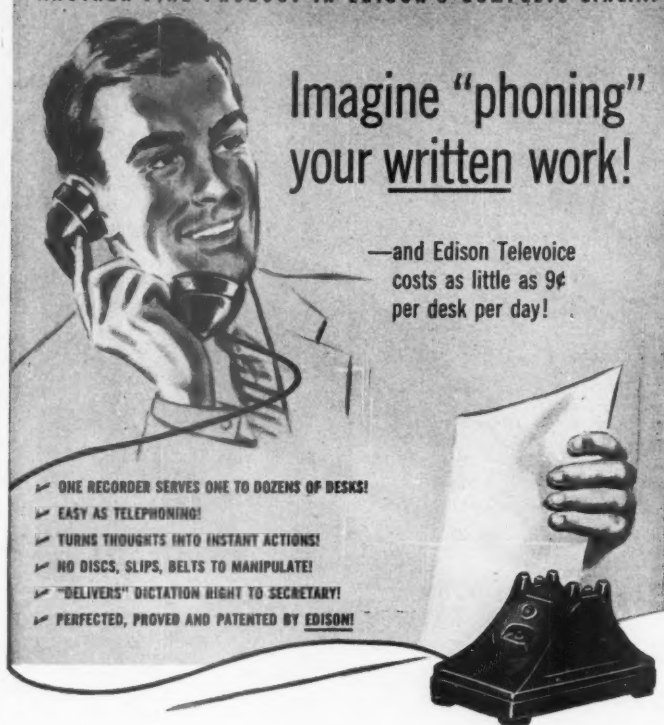
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Expansion Snafu

Shortage of construction, bad planning are behind curtailed expansion program. Plant scheduling may help.

Washington has only just begun to untangle the snarls of industrial expansion.

So, unless your new plant or addition is already under construction, don't look to the government for much help in getting it built.

The immediate snag is the acute shortage of structural steel. Demand for structural shapes for the fourth quarter of 1951 ran to 223% of available supply for the period.

Mobilizer Charles E. Wilson finally has faced up to the problem and called for the only logical solution: Schedule expansion, industry by industry, plant by plant. But it will take time to get that job under way. It won't be finished before April.

I. The Preliminaries

The Defense Production Administration has just started the preliminary step—finding out just what expansion industry is prepared to undertake. Then it must evaluate the urgency of each project in relation to present and anticipated defense requirements. Finally, DPA must decide which of the most urgent plants are to be built first.

DPA has reached the secondary stage of review of several programs already: steel, aluminum, petroleum refining, electric power, railroad equipment, natural gas. That is, it has toted up the plant these industries plan to build, started breaking down their costs in terms of materials they would consume to complete and operate them. The agency is working up preliminary figures on about a score of basic chemicals.

• **Top of the List**—Meanwhile, Wilson has provided a rule of thumb for parceling out structural steel and other materials for expansion. First, military, atomic energy, and aluminum expansion get 100% of their needs. So will basic steel production—furnaces and the coke ovens and other facilities that go with them. But steel finishing plant—rolling mills—will be delayed.

Beyond this, materials will go to plants already under construction, with allotments in proportion to their degree of completion.

II. Penalties of Bad Guessing

Scheduling of expansion should have started months ago, of course. But Washington made a bad guess last year

—before Wilson took over the reins of mobilization. His predecessors figured industry wouldn't go all-out on the expansion necessary to support a guns-and-butter, short-of-war economy.

• **Easy Writeoffs**—That's why virtually anyone who wanted to build a plant to produce anything related to foreseeable mobilization needs qualified for five-year tax writeoffs on their projects. By mid-August of this year, when Wilson slapped a moratorium on applications, \$9.7-billion of proposed new facilities had been O.K.'d for accelerated amortization.

And that was just the beginning. Wilson's own estimate of industrial expansion—\$50-billion to \$60-billion for 1951 through 1953—is just an educated guess at the amount of new basic production.

• **Uneven Distribution**—How much the failure to schedule will cut back these plans is anyone's guess. The structural pinch has been spread unevenly over the bulk of the programs. In the fourth quarter, for example, ferroalloy producers received 82% of the structural they requested; steel got 51%; industrial equipment makers, chemicals, and most other programs took an average of 26%.

This kind of meat-axe cutting of materials will continue until Wilson approves whatever schedule of plant expansion DPA can cook up for him. That won't be in time to change allotments before April, if then.

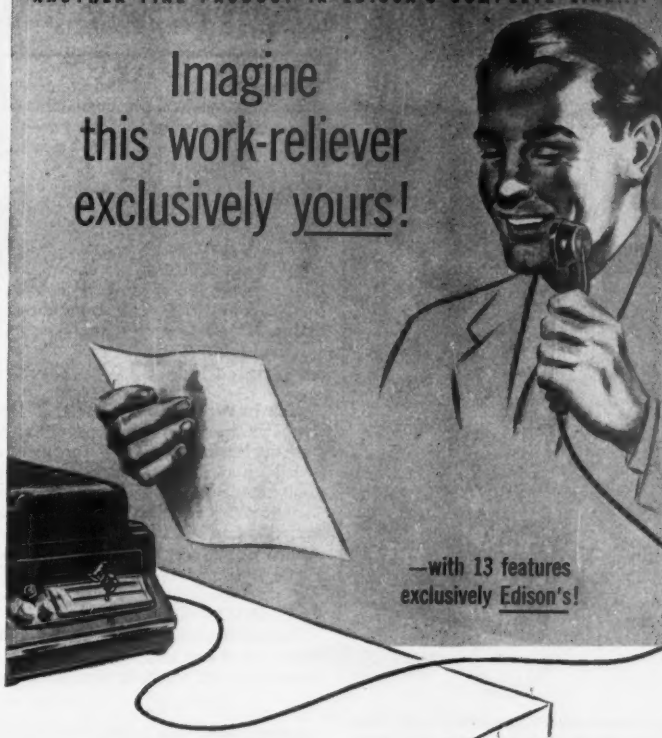


Small Business' Man

Telford Taylor of Schenectady, N. Y., will head the new Small Defense Plants Administration (BW—Sep. 28 '51, p. 26). He's backed by Fair Dealers and the small business bloc, has had a wide variety of Washington jobs since the 30's. Last job: German war crimes trial.

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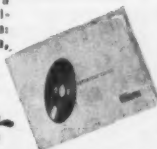


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CHECKLIST: Defense Regulations

The following listing and condensed description cover all the materials and price-control regulations issued by the defense agencies during the preceding week.

Full texts of the materials orders may be obtained from National Production Authority, Washington 25, or from any Dept. of Commerce regional office.

Full texts of the price orders may be had from the Office of Price Stabilization, Washington 25, or from the regional OPS office in your area.

Materials Orders

Construction: Makes clear that Defense Electric Power Administration is not the claimant agency for private construction projects involving power equipment. Also broadens authority of the Secretary of the Army over all projects relating to programs of the Army Corps of Engineers, Panama Canal Company, and domiciliary building of Old Soldiers Home, Wash., D. C. Del. 14, Amdt. 1 (Sept. 25).

Imported steel: Permits a steel consumer to obtain imported steel from a broker or other importer who has taken

title prior to landing it ashore, and not deduct the tonnage from his allotment of controlled materials. CMP Reg. 1, Dir. 4 as amended (Sept. 28).

Consumer durables: Permits a manufacturer of four specified groups of products to shift his production for any calendar quarter from one product to another product in the same group, thus permitting flexibility in use of controlled materials. M-47-B (Sept. 28).

Ferroalloys: Revokes seven orders controlling distribution and uses of critically short ferroalloying materials. These orders have been superseded either by M-80 or M-81. Revocation M-3, M-10, M-14, M-30, M-33, M-49 and M-52 (Oct. 1).

Copper and copper base alloys: Revokes Order M-12 imposing limitations on use of copper and copper-base alloys, since these have been embodied in other regulations covering CMP. M-12, Dirs. 1 and 2, revocation (Oct. 1).

Pricing Orders

Pork: Establishes dollars-and-cents ceiling prices for wholesale pork items and also provides for adjustments in retail ceilings to reflect the actual cost of wholesale pork to retailers. CPR 74; GCPR, SR 65 (eff. Oct. 1).

Cement: Permits resellers of cement and manufacturers of ready-mixed concrete to increase ceiling prices to reflect



Mobilization Moves on Wheels

It's a short stop between the production line and the national defense program for these steel "bogie" wheels. At B. F. Goodrich Co.'s plant in Akron, Ohio, the wheels get a careful inspection before solid rubber tires are vulcanized to the rims. By the

end of 1951, the rubber company will process thousands of these wheels, which roll within rotating rubber band tracks, providing an endless rubber road. The finished product is destined for use on new U.S. Army tanks and half-tracks.



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THESE ARE BATTS made of Norton Crystolon refractory. Notice the slotted batt in the center. Other Norton Crystolon shapes include slag hole blocks, burner blocks, hearth plates and bricks for kilns, industrial furnaces, and water gas generators. They're strong, dense and highly refractory.



GUESS WHAT these shapes are used for. Most of them are for secret chemical processes. They're made of Norton Stabilized Fused Zirconia*, a new, amazing refractory which has lifted processing temperatures as high as 4700°F. It has extraordinary chemical, electrical and insulating properties.

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dollars-and-cents increases in cost of cement purchased from "out-of-area" sources of supply. GCPR, SR 66 (eff. Oct. 2).

Conversion steel: Permits manufacturers to raise their ceiling prices to reflect increased costs of using more conversion steel than they did before the Korean outbreak; however, this cost cannot go above 200% of the current mill prices of the same steel. CPR 22, Amdt. 28; CPR 30, Amdt. 15 (eff. Oct. 2).

Beef (ungraded): Permits the keeping and handling of ungraded and ungrade-marked beef that has been certified to be for home consumption by resident farm operators or livestock raisers. Dir. 2, Amdt. 4; CPR 25, revised; CPR 26, Amdt. 1 (eff. Oct. 1).

Beef (retail): Revises dollars-and-cents ceiling for retail sale of beef, permits sale of a wider variety of retail cuts, and establishes more effective safeguards to protect consumers in buying beef. CPR 25, revised (eff. Oct. 1).

Machinery: Permits new manufacturers who cannot determine ceiling prices under CPR 30 because they were not in business before Jan. 1, 1950, to apply to OPS for proposed ceiling approval. CPR 30, Amdt. 16 (eff. Oct. 2).

Liming materials: Establishes a formula by which producers and sellers of agricultural liming materials in the continental United States may establish their ceiling prices. CPR 77 (eff. Oct. 1).

Railroad ties: Removes temporarily from all price control untreated railroad cross ties and switch ties produced east of the 100th Meridian except North and South Dakota. Untreated ties produced in the western part of the country including the Dakotas and all treated ties remain under GCPR. GCPR, SR 68 (eff. Oct. 3).

Cosmetic gift sets: Provides a special method for packagers of newly introduced cosmetic gift sets to determine ceiling prices. GCPR, SR 67 (eff. Oct. 3).

Glassine and greaseproof papers: Sets dollars-and-cents ceilings on these papers, which are widely used in wrapping and packaging food. CPR 76 (eff. Oct. 3).

Beet pulp: Permits processors to sell wet, dried, and pressed beet pulp at prices agreed upon between themselves and buyers on condition that the processor agrees in writing that the final sales price will be either the contract price or any subsequent OPS ceiling price, whichever is lower. GCPR, SR 69 (eff. Oct. 3).

Canned soups: Establishes processors' ceiling prices on canned soups to permit adjustments for increases in production costs. CPR 75 (eff. Oct. 3).

Alcoholic beverages: Sets up series of

ceiling price regulations covering both domestic and imported distilled spirits and wines; also establishes dollars-and-cents ceiling prices for all sales of domestic bulk whiskey in barrels. CPR 78; SR 1 (eff. Oct. 8).

DEFENSE BUSINESS BRIEFS

Dr. James Boyd, director of the Bureau of Mines, has resigned to join the executive staff of Kennecott Copper Corp. Oct. 16. His resignation followed a series of clashes with Interior Secretary Oscar Chapman over minerals expansion for mobilization. Their disagreements came to a head over Chapman's proposal to push a coal hydrogenation project through to a quick decision.

Walter C. Skuce has dropped active direction of the Controlled Materials Plan. He will continue to serve as an NPA consultant, but will return to his job with Owens-Corning Fiberglas Corp. William C. Truppner, government economist and Skuce's assistant, will take over direction of the CMP office.

Two industries have been warned of materials cuts for the first quarter. NPA told makers of light power-driven tools, and makers of household refrigerators and freezers, to expect less.

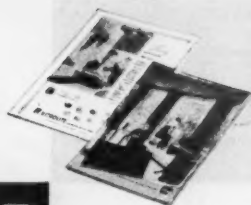
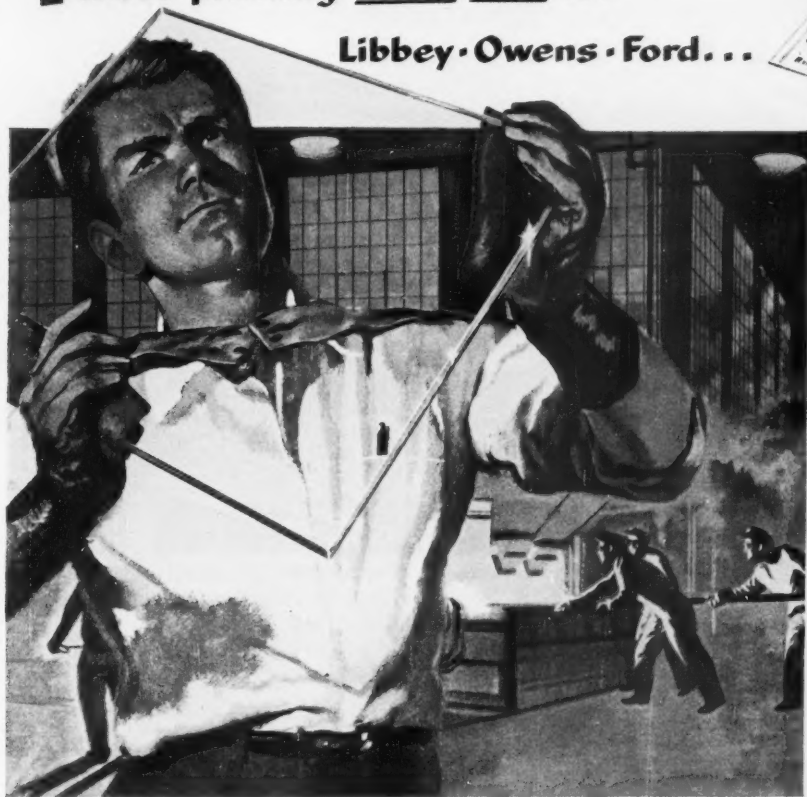
Lead shortage has become so acute that it should be included with steel, copper, and aluminum as a controlled material, makers of bearings told NPA.

Conservation note: NPA is going to put a drip pan under movie house arc lamps to salvage copper. Drippings are about 94% pure copper, and NPA says around 100,000 lb. of metal can be salvaged in a year.

The Pictures—Cover painting by Robert S. Sloan. Acme—32 (top lt., top rt., bot.), 34; Harris & Ewing—30, 150 (lt.); Robert Iscar—22, 23, 66, 67, 73, 150 (rt.); Keystone—50, 173 (lt.); Bob Leavitt, Pix—150 (ctr.); McGraw-Hill World News—176; Moulin—116, 119; Ed Nano—130; Bernard Newman, Scope—78 (bot. lt.), 79 (top, bot. rt.); Oxford University Press—102; Mickey Pallas—40 (top); David Seymour, Magnum—173 (top rt., bot. rt.); Solar Aircraft Co.—46, 47; Thompsons—124; Weissner Studio—78 (bot. rt.); Wide World—33 (ctr.), 165; Dick Wolters—32 (top ctr.), 58, 63, 138, 178.

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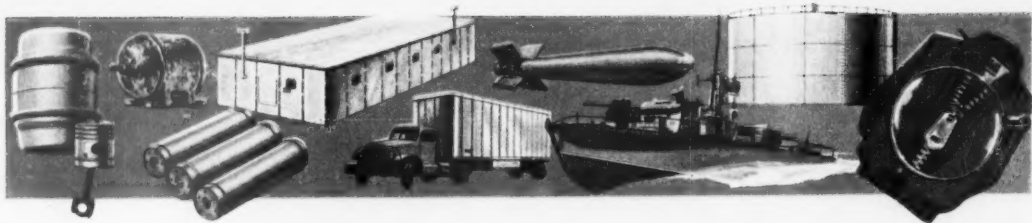
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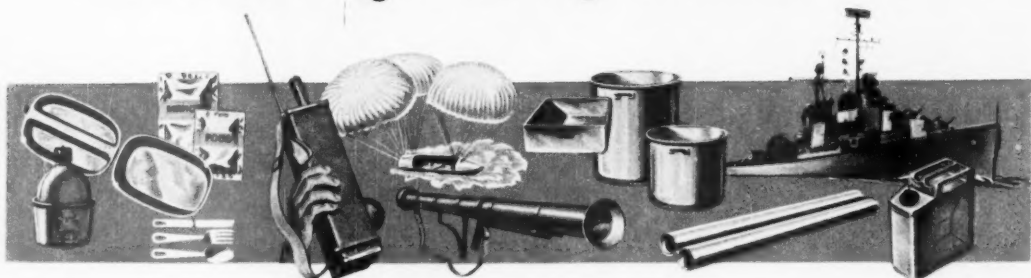
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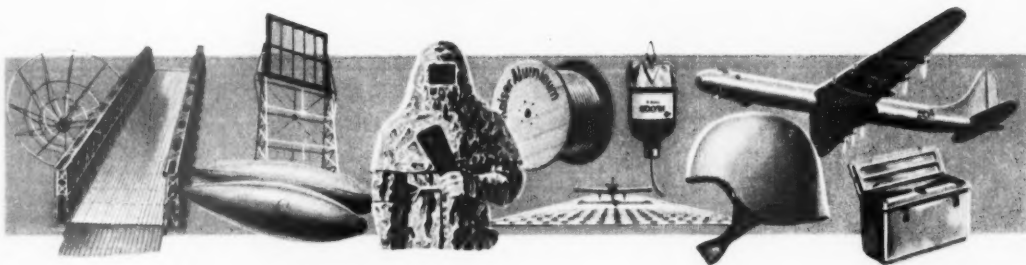
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INTERNATIONAL OUTLOOK

BUSINESS WEEK

OCTOBER 6, 1951

A

BUSINESS

WEEK

SERVICE

Stalin still has the U. S. guessing about his game in Korea. And that's creating some tough policy problems for Washington.

The Pentagon has about written off the cease-fire talks. It thinks we ought to force the Communists' hand with a new U.N. offensive (page 15). The military doesn't relish the thought of waiting for a possible enemy push or a winter-long stall by the Reds.

But the State Dept. is a little more optimistic that the Communists will finally accept our terms in Korea. While there's the faintest hope of this, State will hold out against a big U. N. offensive.

As the State Dept. sees it, Stalin's goal now is to slow down Western rearmament.

That means he may soon be ready to pay a high price to get what he wants. He might even agree to genuine disarmament proposals or a deal that would unite East and West Germany.

To make any headway on either of these fronts, according to State, Stalin would first have to stop the fighting in Korea.

This will probably be Western Europe's toughest winter since 1947.

Rearmament has set off an inflationary spiral that's sure to cause social unrest, especially in France.

But U. S. officials in Paris expect the Europeans to be out of the woods before next summer. By that time, they say, U. S. economic aid—direct and indirect—will be covering Western Europe's deficits again.

All told, Western Europe probably will get more than \$3-billion between now and mid-1952 on top of its own dollar earnings.

Here's a rough breakdown:

- The Mutual Security Bill provides about \$1-billion in economic assistance. And the bill allows 10% of military aid—or about \$500-million—to be transferred to economic aid.
- Military aid funds will be used for off-shore purchases in Europe—perhaps to the tune of \$1-billion or more.
- By mid-1952 U. S. forces in Europe are expected to spend \$300-million locally on military supplies and services. And American GI's may spend personally another \$300-million or so.

Keep your eye on Soviet moves in Germany. French diplomats expect Moscow to call for new Big Four talks to discuss German unity and neutrality.

As the French see it, the Russians may be ready for genuine concessions this time, including free elections. The French think Stalin would rather have a united Germany that's non-Communist and neutral than a rearmed West Germany tied tightly to the West.

Intelligence reports from Berlin support the French view. They tell this story:

Vladimir Semyonov, Stalin's top diplomat in Berlin, returned from Moscow Sept. 13 with a new "line." Semyonov told the East German Red leaders that they hadn't sold the unity idea in West Germany or blocked rearmament there. So Stalin decided that unity based on free elections was the only solution—even if that meant giving up Communist control of the government.

INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK

OCTOBER 6, 1951

U. S. policy would suffer a severe blow if the Russians really follow the united-Germany line.

There's no doubt that the West Germans would jump at any offer that promised reunion with the East Germans under a genuine German government.

If a Russian guarantee of German neutrality looked at all solid, the French would gladly give up the idea of German rearmament.

Even if the Russians are bluffing, they can probably cover up their bluff until they've forced the U. S. into Big Four talks. And that would stall German rearmament somewhat longer.

Don't look for any decisive action on Iran from the U. N. Security Council.

Not even the British expect real results from the U. N. The Attlee government put the Iranian problem in the U. N.'s lap largely because it was politically necessary to make a new move of some kind.

Once Attlee decided, with some prodding from Truman, to pull British technicians out of Abadan, he was tossing in the sponge (Attlee's handling of Iran is sure to count heavily against him in the Oct. 25 election).

There's still some hope in London that economic pressure will topple Premier Mossadegh and lead to a negotiated settlement in Iran.

On this point, though, London and Washington are at odds.

U. S. officials fear that economic collapse in Iran would force the country into Stalin's camp.

So the U. S. wants the British to thaw the sterling balances that Iran has in London—though there's no guarantee that the British will ever get a cent of compensation for their oil properties.

Some American officials are even talking up economic aid for Iran—to save the country from communism.

U. S. businessmen with investments abroad will shudder at this new twist to U. S. policy in Iran.

One of the big goals of the Harriman mission was to get a settlement that wouldn't reward nationalization of foreign-owned assets.

Any way you look at it, Iran already has struck a body blow at investment in undeveloped countries. From the economic angle, it doesn't make much sense to pay a nation for doing that.

Last week's Argentine "revolt" was a total flop. It did little more than strengthen Peron's hand for the election on Nov. 11.

Gen. Menendez' abortive conspiracy was so poorly executed that few believe he had any important backers. In fact, Washington suspects that it was a phony—rigged up, or winked at, by Peron to boost his political stock.

Observers in Buenos Aires discount the theory of a rigged revolt. But they agree that Peron has the excuse he wanted for liquidating the opposition.

True to form, the U. S. emerged as preelection whipping boy for Argentina's woes.

Still, that's mainly for domestic consumption. Once the election is over, Peron may be asking the U. S. for a loan.

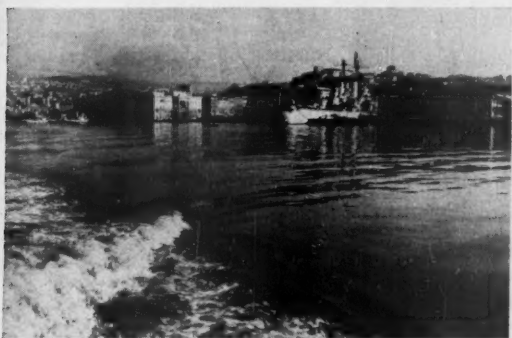
BUSINESS ABROAD



ITALIAN VISITOR: Premier de Gasperi came to ask for economic and political favors.



IDLE MEN, IDLE PLANTS are holding Italy's economy down. De Gasperi thinks that United States defense orders will help out.



TRIESTE Italians want it, so do the Yugoslavs. But the U.S. prefers to stay out of the argument.

De Gasperi Gets Promises—With Reservations

Idle men, idle plants, and Trieste. That's a nutshell catalogue of Italy's present woes. To do something about them, Italian Prime Minister Alcide de Gasperi spent last week in Washington talking to President Truman, Secretary Acheson, and other top officials.

Washington listened carefully to the scholarly, 70-year-old premier. Italy occupies a strategic position on Gen. Eisenhower's right flank. And the U.S. doesn't feel it can afford to let Italy remain a poor relation to its 11 Atlantic Pact allies—struggling with a monumental unemployment problem and the strident shouts of home-grown Communists.

• **Some Promises**—So, at week's end, de Gasperi flew back to Rome with some U.S. promises under his belt. They weren't everything he asked for—by a long shot. But the premier hopes they'll boost his personal stock at home

and strengthen Italy politically and economically. Here's what he accomplished.

- The West, led by the U.S., will make a new effort to get Italy into the United Nations. If Russia's veto blackballs the Italians again, we'll try to find a "new avenue" for membership.

- The 1947 Italian peace treaty (to which Moscow is a signatory) will be changed drastically to match the liberal Japan pact and the "contractual agreement" that's being shaped for Germany. All restrictions on the size of Italy's armed forces will be scrapped.

- All bars will be lifted on the kind of weapons Italian factories can turn out—for itself and its allies. The U.S. promised to give Italy a share of its off-shore purchasing dollars (BW—Sep. 22 '51, p. 167).

- The U.S. will help Italy relieve its chronic overpopulation problem, try

to get an international formula for moving Italians to nations suffering from manpower shortages.

- **Some Explaining To Do**—There was one big disappointment, though. The U.S. couldn't back Italy's request for the return of the Free Territory of Trieste—first and foremost of Italy's patriotic issues. The best we could do is give vague assurances of "cooperation." And that means de Gasperi will have some explaining to do to quiet rabid Italian nationalists.

I. Way to a Comeback

All but Italian Communists are pleased with the long-awaited declaration on the Italian peace treaty. If the West lives up to its promise—and overrides what are sure to be violent Soviet objections—Italy can set about expanding its skeleton army of 250,000, its

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46-ship navy, its 350-plane air force. It can arm Italian soldiers with tanks, jet fighters, bombers, submarines, other heavy equipment now prohibited by the tough military clauses of the treaty.

What's more, de Gasperi and his finance minister, Giuseppe Pella, think the treaty revision will clear the way for a bigger and faster economic comeback in Italy.

In Washington, de Gasperi and his aides estimated that Italian industry could produce \$500-million worth of defense equipment in the next two years.

• **Needs Raw Materials**—Italy, said the visitors, can do this defense job if it gets further U.S. assistance. It needs only raw materials before it can produce big quantities of vehicles, explosives, ammunition, electronic equipment, precision tools, even aircraft.

For example: Italy needs 400,000 tons of U.S. steel over the next 12 months, a lot more than the 24,000 tons of copper that it's been allocated.

• **Our Promise**—De Gasperi got only one hard-and-fast economic promise out of Washington: A good hunk of the off-shore procurement dollars the U.S. Defense Dept. hopes to spend in western Europe. No figure was given. But military experts talked about placing \$100-million worth in Italy, out of the \$500-million that may be spent abroad during fiscal 1952. And Italy will continue to share in Marshall Plan and Military Assistance aid—within the limit of existing funds.

Still, Italians consider this enough for some large-scale planning. They're sure their factories can turn out good military equipment—on schedule. And once the word gets around, they say, more contracts will begin to flow their way. Some even talk of putting 150,000 of Italy's 2-million unemployed to work within the next two years.

II. A Lending Hand

But 150,000 is only a drop in the bucket. Italy can't expect anything resembling prosperity at home, even if factories work around the clock. Overpopulation throttles development of higher living standards; each year Italy has 400,000 more mouths to feed (present population: 46-million). And unless a gigantic international immigration scheme is devised, Italy will continue to be plagued by unemployment—and communism.

Right now, no such program is in the works—though Italians have been going to Latin America in increasing numbers and some attempts, though feeble, have been made to bring them to Britain to help out in the labor-starved mines.

• **Disappointed**—The U.S. promised to lend a hand with an emigration scheme.

But de Gasperi was disappointed that President Truman didn't offer to relax the U.S. Italian immigration quota, now pegged at 5,000 yearly.

III. What About Trieste?

Prime Minister de Gasperi returned empty-handed to Italy as far as Trieste is concerned. And that may make his political life difficult. No issue in Italy generates more emotional heat than the future of Trieste.

• **Changing Times**—Right after the war, the Big Four made a Free Territory out of the 385,000-sq. mi. Trieste area on the Adriatic Sea. The northern zone was placed under U.S.-British military rule, the southern half under Yugoslav control. Then, in 1948, France, Britain, and the U.S. called for the return of Trieste to Italy—hoping to steal some of the thunder from Italian Communists in the crucial 1948 elections.

Times have changed now, though. Yugoslavia has left the Moscow fold, is now a de facto ally of the West. So the U.S. doesn't want to squeeze Tito too much by demanding that he give up his share of Trieste. The best Washington can do is urge the Italians and Yugoslavs to work it out for themselves.

BUSINESS ABROAD BRIEFS

Never say die: Anglo-Iranian Oil Co. technicians are in Australia, plan to erect an \$80-million refinery there with help from Commonwealth Oil Refineries, Ltd. (controlled by the Australian government). Capacity would be 2-million to 3-million gal. of crude daily. Abadan's capacity: 25-million gal.

Pakistan has given Standard-Vacuum Oil Co., New York, an O.K. to drill for oil in both East and West Pakistan. It's the first U.S. company to get a look-in on Pakistani oil. An aerial survey is slated to get started this week in East Pakistan, bordering Assam.

New plants: General Fuse Co., South River, N. J., has taken over a factory at Villalba, Puerto Rico, will start making glass tube fuses and electronic fuses there soon. The plant was built by the island government's Industrial Development Corp., and General Fuse has an option to buy... Monroe Calculating Machine Co.'s new Dutch plant, at Amsterdam, will start producing in January... The Philippines plan a \$2.5-million steel mill at Iligan, Lanao, to turn out 75,000 tons of reinforcing rods, small structural shapes, flats, angles. Hydropress, Inc., New York, is supplying the machinery.

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CLEAR WATER IS PIPED from Mexico's Lake Lerma over towering mountains, makes four hydroelectric drops on its route to the capital, to bring . . .

Water for Thirsty Mexico City

Mexico City's new water system shoved water shortage into the past. One hurdle left: to make water drinkable.

For years Mexico City's 3-million inhabitants have struggled with a chronic water shortage. Most city mains held water only two or three hours daily. If you were lucky, you had roof tanks to store water the rest of the time.

This month residents of the capital city have all the water they need. There's one catch: Mexico City folks still don't consider the water drinkable. But after 100 years of dreaming—and nine years of work—Mexican engineers have finished the \$25-million Lerma Lake water system. It brings clear water from Lerma on the Pacific side of the continental divide, up hill and down dale for 37 miles, to Mexico City, on the Atlantic side of the slope.

• **Herculean Task**—It was a huge job. There's a 14-mi. aqueduct that carries

water pumped out of the lake to the Las Cruces mountains. Then there's a nine-mile tunnel—one of the longest in Mexico—holed through at the 8,400-ft. level under mountains that sometimes tower 14,000 ft. Once out of the tunnel, the water travels another 14 mi. along the Valley of Mexico aqueduct to storage tanks just outside Mexico City.

The Lerma system has four hydroelectric drops, too, all on the Mexico City side of the mountains. All told, they amount to a 1,000-ft. drop, will eventually generate 16,000 kw. of electric power.

• **Dream Come True**—Since the early days of Mexican independence, engineers have talked about tapping the Lerma water for their dry capital—but gave up every time they looked at the

mountains. Then, in 1942, engineer Eduardo Molina drew up a final set of blueprints and got an O.K. to go ahead.

• **One Hitch**—But Mexican engineers have still more work cut out for them—to make the Lerma water drinkable, despite a modern chlorine plant. That's because the city lies on an old lake bed, and underneath there's a level of swamp water. Lacking good drainage, the level is polluted and tends to make its way into the distribution mains.

Some reports indicate that piping laid only this year has cracked or parted under the pressure, allowing seepage to enter. So it looks as if Mexico City will have to rip up its entire distribution system before the Lerma water can be delivered in drinkable condition.

Easier Business Policy Shapes Up in Spain

Spanish businessmen—and foreigners thinking of doing business in Spain—got a boost for their flagging morale this month. Generalissimo Franco's new Minister of Industry, Joaquin Planell, cast out some broad hints that a new policy toward private enterprise might be on the way.

If that is true, it may make a big difference in Spain's business climate. Up until now the government's National Institute of Industry (INI) has been making it harder and harder for private businessmen to get along. It created a stable of impractical government enterprises that skimmed off the gravy in foreign exchange dealings, hogged scarce materials, often made competition that squeezed private concerns to the wall (BW—Jul. 14 '51, p133).

• **Change**—Just two months ago, following on the heels of the late Admiral Sherman's mission to Madrid, industry boss Juan Suances was replaced by Planell in a general cabinet shakeup. Now Planell promises that INI means to protect and foster private initiative, not kill it off.

Planell's clincher was this: The Siderrurgica Asturiana S. A. (Asturian steel works), organized and controlled by INI, is starting to admit private capital. Eventually, says Planell, and by successive stages, it will become entirely privately owned.

• **Slow Progress**—That's a big move for INI—if it's true. And plenty of Madrid observers think Planell is sincere. They point to the present U.S. negotiations with Spain for a military aid deal, figure we're slowly prodding Franco into an economic awakening. But Spain's businessmen, suffering from a long period of international isolation and iron-bound domestic controls, are inclined to wait and see before they throw their hats in the air.

Jap Titanium Bid

Osaka firm proposes to extract element from iron sand deposits, boost world production, and cut cost.

U.S. manufacturers have been paying \$5 to \$7 a lb. for titanium—and scratching frantically for more. Now a Japanese firm offers to supply the U.S. with all it needs, for less than \$1 a lb.—providing it can get American capital to back the project. At that price, the Japanese titanium would be at least as cheap as the metal Horizons Titanium Corp. hopes to make with its new process (BW—Jul. 7 '51, p. 20).

The Osaka Special Steel Co. has been producing pig iron from iron sand deposits by electric furnace methods for years. The resulting slag contains 50% titanium oxide. Early this year, Hiroshi Ishizuka, engineer-son of the firm's president, announced that he had found a new way of refining the slag to get 99.5% titanium.

• **Wanted: U.S. Capital**—Ishizuka's initial needs are modest. As a starter, the company wants a \$100,000 loan from an American businessman to build a pilot plant. Osaka Steel says it will repay it in two years. The investor can take over the plant's production, plus an option to help finance a larger production unit and get most of what's produced. Also, the investor will have an option to try the process in the U.S. on a royalty basis.

• **Details**—Osaka's president, Kojiro Ishizuka, outlines the development this way:

(1) The three-ton-per-month pilot plant would go up within the framework of the present company. Estimated production cost: around \$3 a lb.

(2) A production unit would be organized later by a new company, owned 50-50 by Osaka and the U.S. investor. Capacity would be 10 tons monthly, later rising to 30 tons, at a cost of \$2 a lb. Initial capitalization figures out at about \$500,000, rising to \$1-million when the 30-ton output is reached.

(3) Eventually, Ishizuka hopes to boost production well above 30 tons. That would mean a 100-ton refinery or better, plus a company-built power-plant. Such a layout would involve \$6-million. And the cost, says Ishizuka, would drop below \$1 a lb.

Ishizuka insists on American capital for the project. He says he could finance the pilot plant within Japan—but he believes the primary market for titanium will be the U.S. So he wants a Yankee "partner" who will promote its sale and uses.

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Governor Carlton Skinner talks about . . .

Guam: Future Business Base in the Pacific

Businessmen who are having sleepless nights over their lost Orient trade might lend an ear to Carlton Skinner, governor of Guam. He's in the U.S. this week to boost his island territory as a future Far Eastern headquarters of American corporations.

Skinner is bullish on the 224-sq. mi. island's commercial possibilities. Here's why: These days, there is no city in the Far East where a Western businessman can set up shop with any feeling of security. But Asia still needs our goods, and we theirs.

• **U.S. Flag—Guam,** says Skinner, is the answer. There a company's Far Eastern manager is safely under the U.S. flag, its money in a U.S. bank (Bank of America). Guam is just a day's flying time from the U.S., only six hours from Manila, eight or nine from Japan, Australia, Thailand, China. The island is served by four airlines and plenty of ships. And recently RCA Communications, Inc., set up a commercial radiophone and telegraph service to the mainland.

But the big drawing card, Guam boosters believe, is the island's status as a free port. It's outside the U.S. customs area, hasn't any customs duties of its own. What's more, federal law says that articles that are the "growth, production, or manufacture" of Guam can enter the U.S. duty-free. That means raw or semifinished materials from other countries can be brought to Guam, processed there, and then sent to the U.S. at a big saving.

But Guam has its drawbacks: Labor is in tight supply (Guam's population: 60,000), and what there is isn't cheap. Also, the island is just about naked of natural resources other than fine beaches and a good harbor.

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The Age of TNT Makes Way for the Atom

For several weeks the air has been full of talk about "fantastic" new weapons. Out at Frenchman's Flat, Nevada, 5,000 men from all the services will soon assemble to test tactical atomic weapons against front-line combat troops. Work on the atomic-power submarine is under way. Guided missiles named Corporal E and Matador have been unveiled. An additional half-billion dollars has been asked to press ahead with the hydrogen bomb plant on the Savannah River in South Carolina.

As a focus for these developments came the historic speech in the Senate on Sept. 18 by the chairman of the Joint Committee on Atomic Energy, Sen. Brian McMahon. He demanded a revolution in our ideas on weapons. He proposed moving fast to replace conventional with atomic arms. The age of TNT and RDX should give way to the A-age.

McMahon says the time has come when we can think in these revolutionary terms. Our supply of uranium ore has sharply increased. Research has developed more efficient and powerful uses of the atomic chain reaction.

Forces of the Future

The senator sees an atomic army with fewer foot soldiers carrying rifles, but more specialists with atomic shells, short-range guided missiles with atomic warheads, and radiological warfare weapons.

He sees an atomic navy with nuclear-powered submarines and aircraft carriers, capable of delivering target-seeking torpedoes, missiles, and bombs armed with atomic explosives.

He sees an air force capable of delivering atomic attacks against the enemy's industrial sinews and against enemy troops, supply dumps, and transportation choke points.

That is McMahon's vision of our armed might of the future. He is impatient to get started. Since World War II ended, only 3¢ out of every defense dollar has been allotted to atomic bombs. He wants to step up our \$1-billion atomic budget to \$6-billion right away. In a few years, he claims, we can have an atomic defense establishment for half the cost of a conventional one.

What McMahon sees ahead is heartening to Americans who have had hard going figuring out how the free world can carry this immense armament burden indefinitely. His speech also helps us understand how a relatively small army equipped with atomic weapons could match the manpower hordes that Russia and Red China are capable of putting in the field.

Obviously McMahon's atomic military establishment is not just around the corner. We will have to rely on conventional weapons to face the needs of the critical next few years. To count on meeting today's crisis with tomorrow's weapons is as bad as preparing for the last war. And as Defense Secretary Lovett made clear the other day the premature adoption of modern but untried

weapons could be disastrous. McMahon's economy argument probably has to be taken with a grain of salt, too, because the more modern weapons are the more they cost.

McMahon's look into the future, more distant than he believes no doubt, stirs up a new set of issues.

- Military strategy, now centered on the air force, will be centered more and more on atomic weapons. That's as it should be for the airplane will in time be displaced. Building a strategy on a variety of atomic weapons is a sounder approach.

- New problems will arise in our relations with our allies. Will we deliver atomic weapons to them for custody and use? Will we assume sole responsibility for their production? Do the new weapons offer hope of making the defense burden on their economies more bearable?

- Supplies of vital materials, specifically uranium ores, would have to be assured at all costs. At present that means the virtual inclusion of the Belgian Congo within the defense perimeter of the United States as long as its sources are so important.

- The atomic and hydrogen age will obviously bring more emphasis on things like civil defense, plant dispersal, and government decentralization.

The new era of atomic weapons is not yet here. But it's on the way. It's our job to see nothing impedes the "major expansion" in atomic weapons that Secretary Lovett and the Joint Chiefs of Staff have just requested. This is the kind of inventive, engineering, and productive magic in which the free world excels. It is upon the fruit of our freedom that we must depend to preserve our way of life.

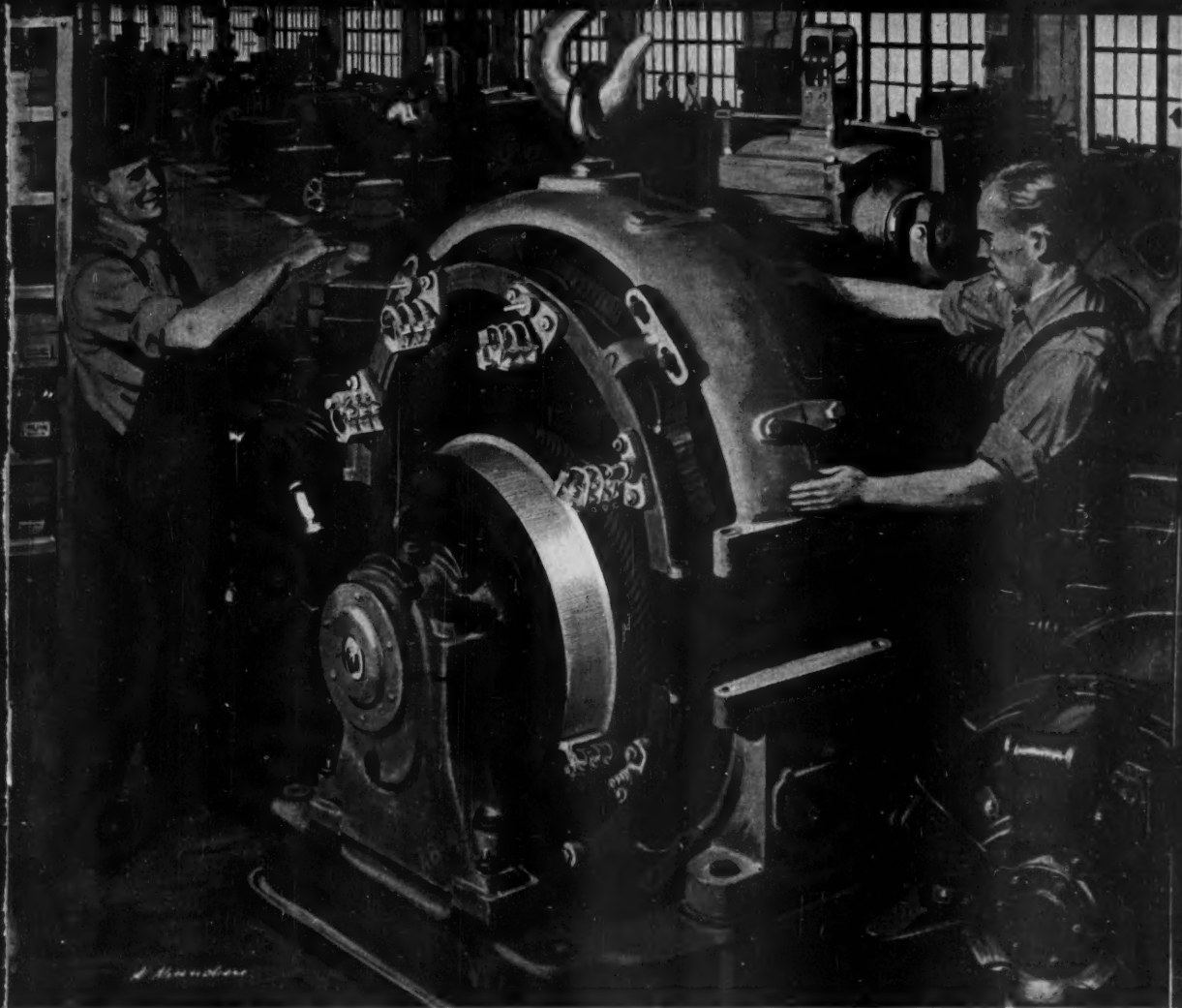
De Lattre

It used to be "Lafayette, we are here!" Now it is "de Lattre, we're glad you're there."

The general in chief of French forces in Indo-China with his long name (Jean de Lattre de Tassigny) inspired confidence and cleared away confusion during his recent visit here. For the first time in too many years Americans caught sight of a French leader who is inspiring, tough, and competent.

This is the kind of thing we need. For too long the French have inspired mostly doubt. This man looks worth helping. He showed before he came that the French are fighting in Indo-China.

His visit has helped clear the Asian mists. The French fight in Indo-China, the British fight in Malaya, the United Nations fight in Korea are all parts of the same struggle. The old colonial tyrannies are dead, and the great menace of the free world is the new tyranny of Soviet Russia. De Lattre has helped us understand that.



AN ELEVATOR MACHINE YOU'LL NEVER WEAR OUT

We can give you an almost endless list of Otis installations. The Singer Building, New York, 1908. Morris Building, Philadelphia, 1909. Syndicate Trust Building, St. Louis, 1907. All recently modernized. With the original Otis gearless hoisting machines still in service.

We'll tell you why. Otis machines are not adaptations of standard commercial equipment. They're specifically designed to meet the unique requirements of elevator service. And every part is built in Otis plants under rigid quality control — from cast steel frames to copper wound field coils. All, with a basic knowledge of elevating that is unequalled anywhere.

How much of the complete elevator installation does Otis manufacture? Almost everything. Over 28,000 parts. From the smallest switches in the machine room to the beautifully etched elevator doors. Plant area? 1,600,000 square feet. Employees? 3,200 plant workers interested in making certain that every Otis installation—*performs as a completely integrated unit!*

Add Otis elevator manufacturing to Otis elevator research, planning, engineering, construction and service and you have the reasons why the Otis trade-mark is the symbol of the world's finest elevators and escalators. Otis Elevator Company, 260 11th Ave., New York 1, N. Y.

BETTER ELEVATORING IS THE BUSINESS OF



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More than a touch of Beauty

Back of every finishing touch, there's much more than a touch of beauty. There's character—the ability to be beautiful and to stay beautiful.

In the field of paints, varnishes, lacquers, this character is the sum total of numerous factors—color, gloss, clarity, depth, resistance to acid, wind, weather. All these, and more, are added by chemicals—many of them supplied by Monsanto.

Monsanto manufactures the world's most complete line of plasticizers and resins. They are basic to the manufacture of paints, enamels, lacquers — improve flexibility, heat and light stability, durability, over-all production economics.

Many metal finishes must combine color depth and gloss retention with excellent

weatherability, scratch and shock resistance. These properties, among others, are supplied by a Monsanto series of melamine, urea and phenolic resins.

Added to shellacs and lacquers before packaging, Monsanto inhibitors react with the container wall—form a protective film that prevents contamination . . . Monsanto also supplies styrene latex and special plasticizers to manufacturers of water-thinned paints.

Thus, Monsanto helps manufacturers of industrial finishes and coatings—often with outstanding results in performance and economy...Monsanto Chemical Company, 1700 South Second Street, St. Louis 4, Missouri. In Canada: Monsanto (Canada) Limited, Montreal and Vancouver.



Protection and Defense

Because they act as a defense against rust and other forms of deterioration, paints, varnishes and lacquers are important to the national defense efforts. In this, the following Monsanto chemical and plastic applications are typical:



Color, gloss and durability are chemically combined in metal-surface coatings formulated with the Monsanto Resimene* series of melamine, urea and phenolic resins. These resins are available in a large group of combinations that offer numerous advantages—meet general and specialty finishing requirements.



Fine wood finishes are achieved with coatings containing Monsanto plasticizers and resins, such as phthalic and maleic anhydride, triphenyl phosphite, Benthal* and Santolite* resins. They impart improved flexibility, heat and light stability . . . Santocel*—Monsanto's silica aerogel—is a flattening agent for hand-rubbed effects at low-cost production rates.



Tough paints for tough jobs can be formulated with Monsanto AROCLORS.* These chlorinated polyphenyls provide unusual protection, nonflammability, superior adhesion, resistance to water, acids, alkalis and other corrosive influences. Also useful in modified and synthetic-rubber coatings.

GET MORE INFORMATION . . . Manufacturers and formulators of paints, lacquers, enamels, varnishes are invited to contact Monsanto for information on the following products:

- ☐ Resimene surface-coating resins . . .
- ☐ Plasticizers for formulating ☐ paints,
- ☐ varnishes, ☐ enamels, ☐ lacquers . . .
- ☐ Santolite resins . . . ☐ Lustrac* styrene emulsions for water-base paints . . .
- ☐ Laux Rez* clear resin sealer . . .
- ☐ Inhibitor 038, for corrosion resistance in metal containers . . . ☐ Santocel flattening agent, for varnishes and lacquers . . .
- ☐ AROCLORS for corrosion-resistant coatings, modified and synthetic-rubber base paints . . . ☐ Lamphacks . . .
- ☐ Solvents.

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Serving Industry . . . Which Serves Mankind